

Algebra 1

Exit Tickets

This document contains printable and customizable versions of the Exit Tickets recommended
in the Into Math Teacher Edition. The Exit Ticket is also available as a Projectable PDF on
Ed: Your Friend in Learning.

Exit Tickets are an optional way to wrap up a lesson. The problem provided for each lesson assesses
whether students grasped the lesson content.

To save paper when printing, the document is formatted with 2 to a page for some lessons and 4 to a page
in other lessons, based on the space students will likely need to answer the question(s).

Copyright © by Houghton Mifflin Harcourt Publishing Company

All rights reserved. No part of the material protected by this copyright may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, broadcasting or by any other information storage and retrieval system, without written permission of the copyright owner unless such copying is expressly permitted by federal copyright law.

Only those pages that are specifically enabled by the program and indicated by the presence of the print icon may be printed and reproduced in classroom quantities by individual teachers using the corresponding student’s textbook or kit as the major vehicle for regular classroom instruction. Requests for information on other matters regarding duplication of this work should be submitted through our Permissions website at https://customercare.hmhco.com/contactus/Permissions.html or mailed to Houghton Mifflin Harcourt Publishing Company, Attn: Compliance, Contracts, and Licensing, 9400 Southpark Center Loop, Orlando, Florida 32819-8647.

HOUGHTON MIFFLIN HARCOURT and the HMH Logo are trademarks and service marks of Houghton Mifflin Harcourt Publishing Company. You shall not display, disparage, dilute or taint Houghton Mifflin Harcourt trademarks and service marks or use any confusingly similar marks, or use Houghton Mifflin Harcourt marks in such a way that would misrepresent the identity of the owner. Any permitted use of Houghton Mifflin Harcourt trademarks and service marks inures to the benefit of Houghton Mifflin Harcourt Publishing Company.

All other trademarks, service marks or registered trademarks appearing on Houghton Mifflin Harcourt Publishing Company websites are the trademarks or service marks of their respective owners.

Module 1 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are the negative integers closed under addition? Under multiplication? Explain why or why not.

Module 1 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are the negative integers closed under addition? Under multiplication? Explain why or why not.

Module 1 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are the negative integers closed under addition? Under multiplication? Explain why or why not.

Module 1 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are the negative integers closed under addition? Under multiplication? Explain why or why not.

Module 1 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The time it takes a planet to orbit a star is proportional to $\sqrt{a^{3}}$, where $a$is the average distance of the planet from the star.

Write the expression $\sqrt{a^{3}}$ using a rational exponent.

Module 1 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The time it takes a planet to orbit a star is proportional to $\sqrt{a^{3}}$, where $a$is the average distance of the planet from the star.

Write the expression $\sqrt{a^{3}}$ using a rational exponent.

Module 1 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The time it takes a planet to orbit a star is proportional to $\sqrt{a^{3}}$, where $a$is the average distance of the planet from the star.

Write the expression $\sqrt{a^{3}}$ using a rational exponent.

Module 1 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The time it takes a planet to orbit a star is proportional to $\sqrt{a^{3}}$, where $a$is the average distance of the planet from the star.

Write the expression $\sqrt{a^{3}}$ using a rational exponent.

Module 1 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Water is flowing at a rate of 38.25 liters/second. Calculate how much water flows in 5 minutes and 17 seconds.

Module 1 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Water is flowing at a rate of 38.25 liters/second. Calculate how much water flows in 5 minutes and 17 seconds.

Module 1 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Water is flowing at a rate of 38.25 liters/second. Calculate how much water flows in 5 minutes and 17 seconds.

Module 1 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Water is flowing at a rate of 38.25 liters/second. Calculate how much water flows in 5 minutes and 17 seconds.

Module 2 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A rectangular garden has a width of 21 feet. Its length is

*x* yards longer than its width.

Write an expression that represents the area of the garden.

Simplify the expression.

Is the simplified expression equivalent to the original

expression? Justify your answer.

Module 2 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A rectangular garden has a width of 21 feet. Its length is

*x* yards longer than its width.

Write an expression that represents the area of the garden.

Simplify the expression.

Is the simplified expression equivalent to the original

expression? Justify your answer.

Module 2 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Kyla alternates between walking and jogging on an 11-mile

trail. Her walking speed is 4 mi/h, and her jogging speed is

6 mi/h. Kyla takes 2 hours to go from the beginning to the

end of the trail. Write and solve an equation to find the

distance Kyla walked and the distance she jogged.

Module 2 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Kyla alternates between walking and jogging on an 11-mile

trail. Her walking speed is 4 mi/h, and her jogging speed is

6 mi/h. Kyla takes 2 hours to go from the beginning to the

end of the trail. Write and solve an equation to find the

distance Kyla walked and the distance she jogged.

Module 2 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Kyla alternates between walking and jogging on an 11-mile

trail. Her walking speed is 4 mi/h, and her jogging speed is

6 mi/h. Kyla takes 2 hours to go from the beginning to the

end of the trail. Write and solve an equation to find the

distance Kyla walked and the distance she jogged.

Module 2 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Kyla alternates between walking and jogging on an 11-mile

trail. Her walking speed is 4 mi/h, and her jogging speed is

6 mi/h. Kyla takes 2 hours to go from the beginning to the

end of the trail. Write and solve an equation to find the

distance Kyla walked and the distance she jogged.

Module 2 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

James is selling fresh rolls for his new bakery. He has a fixed

cost of $1500 for a cooler that can store the dough for the

rolls. Each roll costs $0.50 to make, and James will sell them

for $2.50 each.

Write an equation that models the relationship between profit and the number of rolls sold.

Solve the equation for the number of rolls sold, and

determine the break-even point.

Are there any costs that the model does not account for?

Module 2 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

James is selling fresh rolls for his new bakery. He has a fixed

cost of $1500 for a cooler that can store the dough for the

rolls. Each roll costs $0.50 to make, and James will sell them

for $2.50 each.

Write an equation that models the relationship between profit and the number of rolls sold.

Solve the equation for the number of rolls sold, and

determine the break-even point.

Are there any costs that the model does not account for?

Module 2 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Each month, Henry weeds gardens for 15 hours and mows lawns for *x* hours. For each job, he is paid $9 per hour. He wants to earn at least $252 per month.

Write an inequality to model this situation. Solve and interpret the solution.

Module 2 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Each month, Henry weeds gardens for 15 hours and mows lawns for *x* hours. For each job, he is paid $9 per hour. He wants to earn at least $252 per month.

Write an inequality to model this situation. Solve and interpret the solution.

Module 2 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Each month, Henry weeds gardens for 15 hours and mows lawns for *x* hours. For each job, he is paid $9 per hour. He wants to earn at least $252 per month.

Write an inequality to model this situation. Solve and interpret the solution.

Module 2 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Each month, Henry weeds gardens for 15 hours and mows lawns for *x* hours. For each job, he is paid $9 per hour. He wants to earn at least $252 per month.

Write an inequality to model this situation. Solve and interpret the solution.

Module 2 Lesson 5 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve and graph the inequality.

$$-36\leq -6m<48$$

Module 2 Lesson 5 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve and graph the inequality.

$$-36\leq -6m<48$$

Module 2 Lesson 5 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve and graph the inequality.

$$-36\leq -6m<48$$

Module 2 Lesson 5 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve and graph the inequality.

$$-36\leq -6m<48$$

Module 3 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dan is shopping for footballs and baseballs for summer camp. Footballs cost $10 each, and baseballs cost $4 each. He needs to buy at least one of each, and he wants to spend exactly $50.

Write a linear equation to model the situation and find the solutions.

Module 3 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dan is shopping for footballs and baseballs for summer camp. Footballs cost $10 each, and baseballs cost $4 each. He needs to buy at least one of each, and he wants to spend exactly $50.

Write a linear equation to model the situation and find the solutions.

Module 3 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dan is shopping for footballs and baseballs for summer camp. Footballs cost $10 each, and baseballs cost $4 each. He needs to buy at least one of each, and he wants to spend exactly $50.

Write a linear equation to model the situation and find the solutions.

Module 3 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dan is shopping for footballs and baseballs for summer camp. Footballs cost $10 each, and baseballs cost $4 each. He needs to buy at least one of each, and he wants to spend exactly $50.

Write a linear equation to model the situation and find the solutions.

Module 3 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A line passes through the points $(-3, 7)$ and $(-1, 4)$.

Without calculating the slope, predict whether it will be positive, negative, or 0 and explain your reasoning. Then calculate the slope.

Module 3 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A line passes through the points $(-3, 7)$ and $(-1, 4)$.

Without calculating the slope, predict whether it will be positive, negative, or 0 and explain your reasoning. Then calculate the slope.

Module 3 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A line passes through the points $(-3, 7)$ and $(-1, 4)$.

Without calculating the slope, predict whether it will be positive, negative, or 0 and explain your reasoning. Then calculate the slope.

Module 3 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A line passes through the points $(-3, 7)$ and $(-1, 4)$.

Without calculating the slope, predict whether it will be positive, negative, or 0 and explain your reasoning. Then calculate the slope.

Module 4 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A plumber charges a one-time surcharge fee of $50 for

emergency calls plus a rate of $65 per hour.

Write a function using function notation to determine the total amount charged for an emergency service call. Then find

*f*(4.5), and explain the real-world interpretation of *f*(4.5).

Module 4 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A plumber charges a one-time surcharge fee of $50 for

emergency calls plus a rate of $65 per hour.

Write a function using function notation to determine the total amount charged for an emergency service call. Then find

*f*(4.5), and explain the real-world interpretation of *f*(4.5).

Module 4 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A plumber charges a one-time surcharge fee of $50 for

emergency calls plus a rate of $65 per hour.

Write a function using function notation to determine the total amount charged for an emergency service call. Then find

*f*(4.5), and explain the real-world interpretation of *f*(4.5).

Module 4 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A plumber charges a one-time surcharge fee of $50 for

emergency calls plus a rate of $65 per hour.

Write a function using function notation to determine the total amount charged for an emergency service call. Then find

*f*(4.5), and explain the real-world interpretation of *f*(4.5).

Module 4 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Caroline opened a savings account and made an initial

deposit. She then made weekly deposits into the account.

The table below shows the amount in the account over time.

|  |  |
| --- | --- |
| Week | Amount saved |
| 0 | $250 |
| 1 | $325 |
| 2 | $400 |
| 3 | $475 |

What does the value at week 0 represent if this data were to

be graphed?

What would be the slope of the graph of the function?

Write a linear function for this situation.

Module 4 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Caroline opened a savings account and made an initial

deposit. She then made weekly deposits into the account.

The table below shows the amount in the account over time.

|  |  |
| --- | --- |
| Week | Amount saved |
| 0 | $250 |
| 1 | $325 |
| 2 | $400 |
| 3 | $475 |

What does the value at week 0 represent if this data were to

be graphed?

What would be the slope of the graph of the function?

Write a linear function for this situation.

Module 4 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Give an example of a function that is decreasing, has a zero

at $x=\frac{1}{2}$, and has no minimum or maximum value.

Module 4 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Give an example of a function that is decreasing, has a zero

at $x=\frac{1}{2}$, and has no minimum or maximum value.

Module 4 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Give an example of a function that is decreasing, has a zero

at $x=\frac{1}{2}$, and has no minimum or maximum value.

Module 4 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Give an example of a function that is decreasing, has a zero

at $x=\frac{1}{2}$, and has no minimum or maximum value.

Module 4 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The owners of a banquet hall charge $480 per evening to

rent the hall for up to 40 guests. They also charge $5.50 per

guest for every guest over the 40-person limit.

Write a linear function for the situation.

What would be the charge to rent the banquet hall for 98 guests?

Module 4 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The owners of a banquet hall charge $480 per evening to

rent the hall for up to 40 guests. They also charge $5.50 per

guest for every guest over the 40-person limit.

Write a linear function for the situation.

What would be the charge to rent the banquet hall for 98 guests?

Module 4 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The owners of a banquet hall charge $480 per evening to

rent the hall for up to 40 guests. They also charge $5.50 per

guest for every guest over the 40-person limit.

Write a linear function for the situation.

What would be the charge to rent the banquet hall for 98 guests?

Module 4 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The owners of a banquet hall charge $480 per evening to

rent the hall for up to 40 guests. They also charge $5.50 per

guest for every guest over the 40-person limit.

Write a linear function for the situation.

What would be the charge to rent the banquet hall for 98 guests?

Module 5 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

As she designs a pattern for her wallpaper border, Parker

flips a V-shape from right side up to upside down. If the

function that describes the V-shape is *f*(*x*) , write an equation

to describe the resulting flipped shape.

Module 5 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

As she designs a pattern for her wallpaper border, Parker

flips a V-shape from right side up to upside down. If the

function that describes the V-shape is *f*(*x*) , write an equation

to describe the resulting flipped shape.

Module 5 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

As she designs a pattern for her wallpaper border, Parker

flips a V-shape from right side up to upside down. If the

function that describes the V-shape is *f*(*x*) , write an equation

to describe the resulting flipped shape.

Module 5 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

As she designs a pattern for her wallpaper border, Parker

flips a V-shape from right side up to upside down. If the

function that describes the V-shape is *f*(*x*) , write an equation

to describe the resulting flipped shape.

Module 5 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Every month Gibson Water Company charges customers $25

to be connected to their water system plus $0.005 per gallon

of water used. Write a function *f*(*x*) for the total monthly

water bill based on the number of gallons used. The company expects to increase the connection fee next year to $35.

Write the function *g*(*x*) to model the total monthly

water bill using the rates of next year.

How is the graph of *g* related to the graph of *f*?

Module 5 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Every month Gibson Water Company charges customers $25

to be connected to their water system plus $0.005 per gallon

of water used. Write a function *f*(*x*) for the total monthly

water bill based on the number of gallons used. The company expects to increase the connection fee next year to $35.

Write the function *g*(*x*) to model the total monthly

water bill using the rates of next year.

How is the graph of *g* related to the graph of *f*?

Module 5 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Every month Gibson Water Company charges customers $25

to be connected to their water system plus $0.005 per gallon

of water used. Write a function *f*(*x*) for the total monthly

water bill based on the number of gallons used. The company expects to increase the connection fee next year to $35.

Write the function *g*(*x*) to model the total monthly

water bill using the rates of next year.

How is the graph of *g* related to the graph of *f*?

Module 5 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Every month Gibson Water Company charges customers $25

to be connected to their water system plus $0.005 per gallon

of water used. Write a function *f*(*x*) for the total monthly

water bill based on the number of gallons used. The company expects to increase the connection fee next year to $35.

Write the function *g*(*x*) to model the total monthly

water bill using the rates of next year.

How is the graph of *g* related to the graph of *f*?

Module 5 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Joe borrowed $120 and pays back $10 per month. Kara

borrowed $120 and pays back $12 per month. Compare the

rates of change, *y*-intercepts, and *x*-intercepts of the

functions that model the amount still owed on each loan.

Module 5 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Joe borrowed $120 and pays back $10 per month. Kara

borrowed $120 and pays back $12 per month. Compare the

rates of change, *y*-intercepts, and *x*-intercepts of the

functions that model the amount still owed on each loan.

Module 5 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Joe borrowed $120 and pays back $10 per month. Kara

borrowed $120 and pays back $12 per month. Compare the

rates of change, *y*-intercepts, and *x*-intercepts of the

functions that model the amount still owed on each loan.

Module 5 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Joe borrowed $120 and pays back $10 per month. Kara

borrowed $120 and pays back $12 per month. Compare the

rates of change, *y*-intercepts, and *x*-intercepts of the

functions that model the amount still owed on each loan.

Module 5 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the inverse of the function $f\left(x\right)= -3x-4$.

Module 5 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the inverse of the function $f\left(x\right)= -3x-4$.

Module 5 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the inverse of the function $f\left(x\right)= -3x-4$.

Module 5 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the inverse of the function $f\left(x\right)= -3x-4$.

Module 6 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Artists use body ratios to make realistic drawings. For

example, they use a ratio of 1 to 7.5 for length of head to

length of whole body to draw a human figure. Suppose you

have collected measurements of head lengths and body

lengths from different people.

a) If you plot the data on a scatter plot, what type of

correlation between the variables do you think you will

get?

b) What do you predict the correlation coefficient will be?

c) Is this a causal relationship?

Module 6 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Artists use body ratios to make realistic drawings. For

example, they use a ratio of 1 to 7.5 for length of head to

length of whole body to draw a human figure. Suppose you

have collected measurements of head lengths and body

lengths from different people.

a) If you plot the data on a scatter plot, what type of

correlation between the variables do you think you will

get?

b) What do you predict the correlation coefficient will be?

c) Is this a causal relationship?

Module 6 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The table shows the commute times to work for six people.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Distance (miles) | 4 | 10 | 16 | 22 | 28 | 30 |
| Time (minutes) | 10 | 20 | 35 | 40 | 45 | 55 |

a) Write the equation of the line of best fit. Round parameters to the nearest hundredth.

b) Use the equation to predict the commute time for a distance of 60 miles.

c) Find the correlation coefficient.

Module 6 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The table shows the commute times to work for six people.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Distance (miles) | 4 | 10 | 16 | 22 | 28 | 30 |
| Time (minutes) | 10 | 20 | 35 | 40 | 45 | 55 |

a) Write the equation of the line of best fit. Round parameters to the nearest hundredth.

b) Use the equation to predict the commute time for a distance of 60 miles.

c) Find the correlation coefficient.

Module 7 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mr. Carter wants to rent a moving van. The table shows the

cost in dollars *f*(*n*) for renting a moving van for *n* hours.

Write a recursive rule that models the situation. Use the

recursive rule to find the cost of renting a moving van for

6 hours.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *n* | 1 | 2 | 3 | 4 |
| *f*(*n*) | 25 | 33 | 41 | 49 |

Module 7 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mr. Carter wants to rent a moving van. The table shows the

cost in dollars *f*(*n*) for renting a moving van for *n* hours.

Write a recursive rule that models the situation. Use the

recursive rule to find the cost of renting a moving van for

6 hours.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *n* | 1 | 2 | 3 | 4 |
| *f*(*n*) | 25 | 33 | 41 | 49 |

Module 7 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mr. Carter wants to rent a moving van. The table shows the

cost in dollars *f*(*n*) for renting a moving van for *n* hours.

Write a recursive rule that models the situation. Use the

recursive rule to find the cost of renting a moving van for

6 hours.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *n* | 1 | 2 | 3 | 4 |
| *f*(*n*) | 25 | 33 | 41 | 49 |

Module 7 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mr. Carter wants to rent a moving van. The table shows the

cost in dollars *f*(*n*) for renting a moving van for *n* hours.

Write a recursive rule that models the situation. Use the

recursive rule to find the cost of renting a moving van for

6 hours.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *n* | 1 | 2 | 3 | 4 |
| *f*(*n*) | 25 | 33 | 41 | 49 |

Module 7 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Susan is stacking identical plastic cups. The stack is 4 inches tall after the first cup, 4.75 inches tall after the second cup, and 5.5 inches tall after the third cup. How tall is the stack after the 10th cup?

Module 7 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Susan is stacking identical plastic cups. The stack is 4 inches tall after the first cup, 4.75 inches tall after the second cup, and 5.5 inches tall after the third cup. How tall is the stack after the 10th cup?

Module 7 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Susan is stacking identical plastic cups. The stack is 4 inches tall after the first cup, 4.75 inches tall after the second cup, and 5.5 inches tall after the third cup. How tall is the stack after the 10th cup?

Module 7 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Susan is stacking identical plastic cups. The stack is 4 inches tall after the first cup, 4.75 inches tall after the second cup, and 5.5 inches tall after the third cup. How tall is the stack after the 10th cup?

Module 8 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the function that is graphed.



Module 8 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the function that is graphed.



Module 8 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Carlos is on a highway that passes through Mitchell, South

Dakota. He travels at 75 miles per hour, starting 150 miles

from Mitchell and continuing past it. Write a function *d*(*t*) that

represents Carlos' distance from Mitchell based on the

number of hours since he started. What is the domain of *d*?

Module 8 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Carlos is on a highway that passes through Mitchell, South

Dakota. He travels at 75 miles per hour, starting 150 miles

from Mitchell and continuing past it. Write a function *d*(*t*) that

represents Carlos' distance from Mitchell based on the

number of hours since he started. What is the domain for *d*?

Module 8 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Carlos is on a highway that passes through Mitchell, South

Dakota. He travels at 75 miles per hour, starting 150 miles

from Mitchell and continuing past it. Write a function *d*(*t*) that

represents Carlos' distance from Mitchell based on the

number of hours since he started. What is the domain for *d*?

Module 8 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Carlos is on a highway that passes through Mitchell, South

Dakota. He travels at 75 miles per hour, starting 150 miles

from Mitchell and continuing past it. Write a function *d*(*t*) that

represents Carlos' distance from Mitchell based on the

number of hours since he started. What is the domain for *d*?

Module 8 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

On a box of breakfast cereal, the manufacturer has printed a

content weight of 18 oz. If *w* is the actual content weight of a

box of cereal in ounces, solve the inequality $\left|w-18\right|\leq 0.4$ and interpret the solution.

Module 8 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

On a box of breakfast cereal, the manufacturer has printed a

content weight of 18 oz. If *w* is the actual content weight of a

box of cereal in ounces, solve the inequality $\left|w-18\right|\leq 0.4$ and interpret the solution.

Module 8 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

On a box of breakfast cereal, the manufacturer has printed a

content weight of 18 oz. If *w* is the actual content weight of a

box of cereal in ounces, solve the inequality $\left|w-18\right|\leq 0.4$ and interpret the solution.

Module 8 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

On a box of breakfast cereal, the manufacturer has printed a

content weight of 18 oz. If *w* is the actual content weight of a

box of cereal in ounces, solve the inequality $\left|w-18\right|\leq 0.4$ and interpret the solution.

Module 9 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A novelty store sells a total of 10 small charms on a weekday

morning. The total amount collected is $9, with a star charm

priced at $1.50 and a heart charm priced at $0.50.

Write and solve a system of equations to find the number of each charm sold. State what your variables and solution represent.

Module 9 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A novelty store sells a total of 10 small charms on a weekday

morning. The total amount collected is $9, with a star charm

priced at $1.50 and a heart charm priced at $0.50.

Write and solve a system of equations to find the number of each charm sold. State what your variables and solution represent.

Module 9 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A novelty store sells a total of 10 small charms on a weekday

morning. The total amount collected is $9, with a star charm

priced at $1.50 and a heart charm priced at $0.50.

Write and solve a system of equations to find the number of each charm sold. State what your variables and solution represent.

Module 9 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A novelty store sells a total of 10 small charms on a weekday

morning. The total amount collected is $9, with a star charm

priced at $1.50 and a heart charm priced at $0.50.

Write and solve a system of equations to find the number of each charm sold. State what your variables and solution represent.

Module 9 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sara buys $30 of produce at the farmer’s market. She spends

$5 more on green vegetables than she does on fruit. How

much did Sara spend on green vegetables and on fruit?

Write and solve a system of equations.

Module 9 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sara buys $30 of produce at the farmer’s market. She spends

$5 more on green vegetables than she does on fruit. How

much did Sara spend on green vegetables and on fruit?

Write and solve a system of equations.

Module 9 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sara buys $30 of produce at the farmer’s market. She spends

$5 more on green vegetables than she does on fruit. How

much did Sara spend on green vegetables and on fruit?

Write and solve a system of equations.

Module 9 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sara buys $30 of produce at the farmer’s market. She spends

$5 more on green vegetables than she does on fruit. How

much did Sara spend on green vegetables and on fruit?

Write and solve a system of equations.

Module 9 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Marcus and his friend James go to a festival. Marcus buys

one game of miniature golf and 3 ride bracelets for a total of

$26. James buys one game of miniature golf and 5 ride

bracelets for a total of $38.

Write a system of equations that models the situation and find the price of the miniature golf game and the ride bracelet.

Module 9 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Marcus and his friend James go to a festival. Marcus buys

one game of miniature golf and 3 ride bracelets for a total of

$26. James buys one game of miniature golf and 5 ride

bracelets for a total of $38.

Write a system of equations that models the situation and find the price of the miniature golf game and the ride bracelet.

Module 9 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Marcus and his friend James go to a festival. Marcus buys

one game of miniature golf and 3 ride bracelets for a total of

$26. James buys one game of miniature golf and 5 ride

bracelets for a total of $38.

Write a system of equations that models the situation and find the price of the miniature golf game and the ride bracelet.

Module 9 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Marcus and his friend James go to a festival. Marcus buys

one game of miniature golf and 3 ride bracelets for a total of

$26. James buys one game of miniature golf and 5 ride

bracelets for a total of $38.

Write a system of equations that models the situation and find the price of the miniature golf game and the ride bracelet.

Module 9 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The school that Jamira goes to is selling tickets to a play. On

the first day of ticket sales, the school sold 7 senior citizen

tickets and 3 child tickets for a total of $64. On the second

day, the school received $98 by selling 9 senior citizen tickets

and 7 child tickets.

Write a system of linear equations to model the problem, and then find the price of a senior citizen ticket and the price of a child ticket.

Module 9 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The school that Jamira goes to is selling tickets to a play. On

the first day of ticket sales, the school sold 7 senior citizen

tickets and 3 child tickets for a total of $64. On the second

day, the school received $98 by selling 9 senior citizen tickets

and 7 child tickets.

Write a system of linear equations to model the problem, and then find the price of a senior citizen ticket and the price of a child ticket.

Module 9 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The school that Jamira goes to is selling tickets to a play. On

the first day of ticket sales, the school sold 7 senior citizen

tickets and 3 child tickets for a total of $64. On the second

day, the school received $98 by selling 9 senior citizen tickets

and 7 child tickets.

Write a system of linear equations to model the problem, and then find the price of a senior citizen ticket and the price of a child ticket.

Module 9 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The school that Jamira goes to is selling tickets to a play. On

the first day of ticket sales, the school sold 7 senior citizen

tickets and 3 child tickets for a total of $64. On the second

day, the school received $98 by selling 9 senior citizen tickets

and 7 child tickets.

Write a system of linear equations to model the problem, and then find the price of a senior citizen ticket and the price of a child ticket.

Module 10 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

James can pack up to 110 books in boxes of two sizes.

Small boxes hold 6 books each. Large boxes hold 10 books

each. Let *x* represent the number of small boxes, and *y*

represent the number of large boxes.

Write an inequality that represents the number of boxes of each size he can use. Then describe the graph of the inequality.

Module 10 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

James can pack up to 110 books in boxes of two sizes.

Small boxes hold 6 books each. Large boxes hold 10 books

each. Let *x* represent the number of small boxes, and *y*

represent the number of large boxes.

Write an inequality that represents the number of boxes of each size he can use. Then describe the graph of the inequality.

Module 10 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Does the system $\left\{\begin{array}{c}y > 2x - 1\\y \geq \frac{1}{2}x + 1\end{array}\right.$ have a solution? How can you tell without graphing?

Module 10 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Does the system $\left\{\begin{array}{c}y > 2x - 1\\y \geq \frac{1}{2}x + 1\end{array}\right.$ have a solution? How can you tell without graphing?

Module 10 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Does the system $\left\{\begin{array}{c}y > 2x - 1\\y \geq \frac{1}{2}x + 1\end{array}\right.$ have a solution? How can you tell without graphing?

Module 10 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Does the system $\left\{\begin{array}{c}y > 2x - 1\\y \geq \frac{1}{2}x + 1\end{array}\right.$ have a solution? How can you tell without graphing?

Module 11 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the function *f*(*x*) = 0.38(1.12)*x*.

What value would you change if you wanted to increase the *y*-intercept?

What value would you change if you wanted the function to model slower growth?

Module 11 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the function *f*(*x*) = 0.38(1.12)*x*.

What value would you change if you wanted to increase the *y*-intercept?

What value would you change if you wanted the function to model slower growth?

Module 11 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the function *f*(*x*) = 0.38(1.12)*x*.

What value would you change if you wanted to increase the *y*-intercept?

What value would you change if you wanted the function to model slower growth?

Module 11 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the function *f*(*x*) = 0.38(1.12)*x*.

What value would you change if you wanted to increase the *y*-intercept?

What value would you change if you wanted the function to model slower growth?

Module 11 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the function *f*(*x*) = 123(0.98)*x*.

What value would you change if you wanted to decrease the *y*-intercept?

What value would you change if you wanted the function to model slower decay?

What value would you change if you wanted the function to model 2% growth rather than 2% decay?

Module 11 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the function *f*(*x*) = 123(0.98)*x*.

What value would you change if you wanted to decrease the *y*-intercept?

What value would you change if you wanted the function to model slower decay?

What value would you change if you wanted the function to model 2% growth rather than 2% decay?

Module 11 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the function *f*(*x*) = 123(0.98)*x*.

What value would you change if you wanted to decrease the *y*-intercept?

What value would you change if you wanted the function to model slower decay?

What value would you change if you wanted the function to model 2% growth rather than 2% decay?

Module 11 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the function *f*(*x*) = 123(0.98)*x*.

What value would you change if you wanted to decrease the *y*-intercept?

What value would you change if you wanted the function to model slower decay?

What value would you change if you wanted the function to model 2% growth rather than 2% decay?

Module 11 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A bacteria colony doubles every 5 days. After 10 days, the

colony has 1200 bacteria. Write a function to model grow of the colony.

Module 11 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A bacteria colony doubles every 5 days. After 10 days, the

colony has 1200 bacteria. Write a function to model grow of the colony.

Module 11 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A bacteria colony doubles every 5 days. After 10 days, the

colony has 1200 bacteria. Write a function to model grow of the colony.

Module 11 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A bacteria colony doubles every 5 days. After 10 days, the

colony has 1200 bacteria. Write a function to model grow of the colony.

Module 12 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*g*(*x*) is the result of stretching the graph of *f*(*x*) = *bx* by a

factor of 2 and then shifting it up 3 units. Express *g*(*x*) in

terms of *f*(*x*).

Module 12 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*g*(*x*) is the result of stretching the graph of *f*(*x*) = *bx* by a

factor of 2 and then shifting it up 3 units. Express *g*(*x*) in

terms of *f*(*x*).

Module 12 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*g*(*x*) is the result of stretching the graph of *f*(*x*) = *bx* by a

factor of 2 and then shifting it up 3 units. Express *g*(*x*) in

terms of *f*(*x*).

Module 12 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*g*(*x*) is the result of stretching the graph of *f*(*x*) = *bx* by a

factor of 2 and then shifting it up 3 units. Express *g*(*x*) in

terms of *f*(*x*).

Module 12 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Under favorable conditions, certain bacteria, such as E. coli,

can reproduce by fission every half hour. Suppose a food

item was kept warm and moist—two conditions favorable

for bacterial growth. If there is initially just one bacterium

present, how many will there be in the food after eight

hours?

Module 12 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Under favorable conditions, certain bacteria, such as E. coli,

can reproduce by fission every half hour. Suppose a food

item was kept warm and moist—two conditions favorable

for bacterial growth. If there is initially just one bacterium

present, how many will there be in the food after eight

hours?

Module 12 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Under favorable conditions, certain bacteria, such as E. coli,

can reproduce by fission every half hour. Suppose a food

item was kept warm and moist—two conditions favorable

for bacterial growth. If there is initially just one bacterium

present, how many will there be in the food after eight

hours?

Module 12 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Under favorable conditions, certain bacteria, such as E. coli,

can reproduce by fission every half hour. Suppose a food

item was kept warm and moist—two conditions favorable

for bacterial growth. If there is initially just one bacterium

present, how many will there be in the food after eight

hours?

Module 13 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The population of a city over a 5-year period is shown.

|  |  |
| --- | --- |
| Year | Population (thousands) |
| 1 | 621 |
| 2 | 735 |
| 3 | 794 |
| 4 | 862 |
| 5 | 961 |

Use a graphing calculator to find the exponential regression

model of the data. Use the regression model to predict the

population of the city at Year 9. Round each number to the

thousandths place.

Module 13 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The population of a city over a 5-year period is shown.

|  |  |
| --- | --- |
| Year | Population (thousands) |
| 1 | 621 |
| 2 | 735 |
| 3 | 794 |
| 4 | 862 |
| 5 | 961 |

Use a graphing calculator to find the exponential regression

model of the data. Use the regression model to predict the

population of the city at Year 9. Round each number to the

thousandths place.

Module 13 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The population of a city over a 5-year period is shown.

|  |  |
| --- | --- |
| Year | Population (thousands) |
| 1 | 621 |
| 2 | 735 |
| 3 | 794 |
| 4 | 862 |
| 5 | 961 |

Use a graphing calculator to find the exponential regression

model of the data. Use the regression model to predict the

population of the city at Year 9. Round each number to the

thousandths place.

Module 13 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The population of a city over a 5-year period is shown.

|  |  |
| --- | --- |
| Year | Population (thousands) |
| 1 | 621 |
| 2 | 735 |
| 3 | 794 |
| 4 | 862 |
| 5 | 961 |

Use a graphing calculator to find the exponential regression

model of the data. Use the regression model to predict the

population of the city at Year 9. Round each number to the

thousandths place.

Module 13 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

June counts birds in her backyard every day. Her weekly data

is below. Is this situation best represented by a linear model

or an exponential model? Why?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 |
| Number of birds | 50 | 60 | 72 | 86 | 103 | 124 |

Module 13 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

June counts birds in her backyard every day. Her weekly data

is below. Is this situation best represented by a linear model

or an exponential model? Why?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 |
| Number of birds | 50 | 60 | 72 | 86 | 103 | 124 |

Module 13 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

June counts birds in her backyard every day. Her weekly data

is below. Is this situation best represented by a linear model

or an exponential model? Why?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 |
| Number of birds | 50 | 60 | 72 | 86 | 103 | 124 |

Module 13 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

June counts birds in her backyard every day. Her weekly data

is below. Is this situation best represented by a linear model

or an exponential model? Why?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 |
| Number of birds | 50 | 60 | 72 | 86 | 103 | 124 |

Module 14 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Jerry is saving money to buy a car. The table shows the

amount he has saved each month. Do the data values for the amount saved form a geometric sequence? If so, what is the

recursive rule for the sequence?

|  |  |
| --- | --- |
| Month | Amount saved |
| 1 | $115 |
| 2 | $345 |
| 3 | $1035 |
| 4 | $3105 |
| 5 | $9315 |

Module 14 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Jerry is saving money to buy a car. The table shows the

amount he has saved each month. Do the data values for the amount saved form a geometric sequence? If so, what is the

recursive rule for the sequence?

|  |  |
| --- | --- |
| Month | Amount saved |
| 1 | $115 |
| 2 | $345 |
| 3 | $1035 |
| 4 | $3105 |
| 5 | $9315 |

Module 14 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The number of members at a gym at the end of weeks 1, 2,

and 3 is 100, 110, and 121, respectively. The number of

members forms a geometric sequence.

What is the explicit rule for this sequence?

What is the projected number of members at the end of
week 20?

Module 14 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The number of members at a gym at the end of weeks 1, 2,

and 3 is 100, 110, and 121, respectively. The number of

members forms a geometric sequence.

What is the explicit rule for this sequence?

What is the projected number of members at the end of
week 20?

Module 15 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The length of a rectangle is 3*x* and the width is 6*x*. What is

the area of the rectangle?

Module 15 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The length of a rectangle is 3*x* and the width is 6*x*. What is

the area of the rectangle?

Module 15 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The length of a rectangle is 3*x* and the width is 6*x*. What is

the area of the rectangle?

Module 15 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The length of a rectangle is 3*x* and the width is 6*x*. What is

the area of the rectangle?

Module 15 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A cubic box has an exterior with sides of length *x* inches and

an interior with sides of length *x* – 1 inches. Find an

expression for the interior volume.

Module 15 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A cubic box has an exterior with sides of length *x* inches and

an interior with sides of length *x* – 1 inches. Find an

expression for the interior volume.

Module 15 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A cubic box has an exterior with sides of length *x* inches and

an interior with sides of length *x* – 1 inches. Find an

expression for the interior volume.

Module 15 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A cubic box has an exterior with sides of length *x* inches and

an interior with sides of length *x* – 1 inches. Find an

expression for the interior volume.

Module 15 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When framed, a square poster with a side length of
(*x* + 2) in. will be surrounded by a mat that is 2 in. wide.

Write a polynomial expression for the area of the framed poster.

Module 15 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When framed, a square poster with a side length of
(*x* + 2) in. will be surrounded by a mat that is 2 in. wide.

Write a polynomial expression for the area of the framed poster.

Module 15 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When framed, a square poster with a side length of
(*x* + 2) in. will be surrounded by a mat that is 2 in. wide.

Write a polynomial expression for the area of the framed poster.

Module 15 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When framed, a square poster with a side length of
(*x* + 2) in. will be surrounded by a mat that is 2 in. wide.

Write a polynomial expression for the area of the framed poster.

Module 16 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A business has monthly revenue, in dollars, represented by the polynomial $500t^{3}-8000t^{2}+30,000x+80,000$, where $t$ is the number of months since the start of the year. The business has monthly expenses, in dollars, represented by the polynomial $500t^{2}-4000t+30,000$, where $t$ is the number of months since the start of year.

What polynomial represents the monthly profit for the business since the start of the year?

Module 16 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A business has monthly revenue, in dollars, represented by the polynomial $500t^{3}-8000t^{2}+30,000x+80,000$, where $t$ is the number of months since the start of the year. The business has monthly expenses, in dollars, represented by the polynomial $500t^{2}-4000t+30,000$, where $t$ is the number of months since the start of year.

What polynomial represents the monthly profit for the business since the start of the year?

Module 16 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A business has monthly revenue, in dollars, represented by the polynomial $500t^{3}-8000t^{2}+30,000x+80,000$, where $t$ is the number of months since the start of the year. The business has monthly expenses, in dollars, represented by the polynomial $500t^{2}-4000t+30,000$, where $t$ is the number of months since the start of year.

What polynomial represents the monthly profit for the business since the start of the year?

Module 16 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A business has monthly revenue, in dollars, represented by the polynomial $500t^{3}-8000t^{2}+30,000x+80,000$, where $t$ is the number of months since the start of the year. The business has monthly expenses, in dollars, represented by the polynomial $500t^{2}-4000t+30,000$, where $t$ is the number of months since the start of year.

What polynomial represents the monthly profit for the business since the start of the year?

Module 16 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Felipe deposits $1000 in an account that earns *r*% interest in
1 year. (That is, the amount in the account is 1000(1 + *r*) after 1 year.) At the end of a year, John deposits another $1000 in the account, and the entire amount in the account earns *r*% interest in another year. Finally, John deposits another $1000 in the account.

Write a polynomial in simplified form that models the amount in the account when John makes his third deposit.

Module 16 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Felipe deposits $1000 in an account that earns *r*% interest in
1 year. (That is, the amount in the account is 1000(1 + *r*) after 1 year.) At the end of a year, John deposits another $1000 in the account, and the entire amount in the account earns *r*% interest in another year. Finally, John deposits another $1000 in the account.

Write a polynomial in simplified form that models the amount in the account when John makes his third deposit.

Module 16 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Felipe deposits $1000 in an account that earns *r*% interest in
1 year. (That is, the amount in the account is 1000(1 + *r*) after 1 year.) At the end of a year, John deposits another $1000 in the account, and the entire amount in the account earns *r*% interest in another year. Finally, John deposits another $1000 in the account.

Write a polynomial in simplified form that models the amount in the account when John makes his third deposit?

Module 16 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Felipe deposits $1000 in an account that earns *r*% interest in
1 year. (That is, the amount in the account is 1000(1 + *r*) after 1 year.) At the end of a year, John deposits another $1000 in the account, and the entire amount in the account earns *r*% interest in another year. Finally, John deposits another $1000 in the account.

Write a polynomial in simplified form that models the amount in the account when John makes his third deposit.

Module 17 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use a graph to find the zeros of the quadratic function

*f*(*x*) = 3*x*2 – 6*x* – 45.

Module 17 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use a graph to find the zeros of the quadratic function

*f*(*x*) = 3*x*2 – 6*x* – 45.

Module 17 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use a graph to find the zeros of the quadratic function

*f*(*x*) = 3*x*2 – 6*x* – 45.

Module 17 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use a graph to find the zeros of the quadratic function

*f*(*x*) = 3*x*2 – 6*x* – 45.

Module 17 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A rectangular garden has a width of (*x* – 4) meters, a length

of (*x* + 3) meters, and an area of 44 square meters. What are

the dimensions of the garden?

Module 17 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A rectangular garden has a width of (*x* – 4) meters, a length

of (*x* + 3) meters, and an area of 44 square meters. What are

the dimensions of the garden?

Module 17 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A rectangular garden has a width of (*x* – 4) meters, a length

of (*x* + 3) meters, and an area of 44 square meters. What are

the dimensions of the garden?

Module 17 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A rectangular garden has a width of (*x* – 4) meters, a length

of (*x* + 3) meters, and an area of 44 square meters. What are

the dimensions of the garden?

Module 17 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show all steps needed to solve 6*x*2 + 7*x* – 3 = 0.

Module 17 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show all steps needed to solve 6*x*2 + 7*x* – 3 = 0.

Module 17 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show all steps needed to solve 6*x*2 + 7*x* – 3 = 0.

Module 17 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show all steps needed to solve 6*x*2 + 7*x* – 3 = 0.

Module 17 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show all steps needed to factor 4*x*2 – 12xy + 9*y*2.

Module 17 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show all steps needed to factor 4*x*2 – 12xy + 9*y*2.

Module 17 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show all steps needed to factor 4*x*2 – 12xy + 9*y*2.

Module 17 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show all steps needed to factor 4*x*2 – 12xy + 9*y*2.

Module 18 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve 3(*x*2 – 2) + 7 = 241. Write your answer in radical form

and as a decimal number rounded to the nearest tenth.

Module 18 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve 3(*x*2 – 2) + 7 = 241. Write your answer in radical form

and as a decimal number rounded to the nearest tenth.

Module 18 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve 3(*x*2 – 2) + 7 = 241. Write your answer in radical form

and as a decimal number rounded to the nearest tenth.

Module 18 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve 3(*x*2 – 2) + 7 = 241. Write your answer in radical form

and as a decimal number rounded to the nearest tenth.

Module 18 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the equation by completing the square. If necessary, give answers in simplest radical form.

4*x*2 – 20*x* = –9

Module 18 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the equation by completing the square. If necessary, give answers in simplest radical form.

4*x*2 – 20*x* = –9

Module 18 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the equation by completing the square. If necessary, give answers in simplest radical form.

4*x*2 – 20*x* = –9

Module 18 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the equation by completing the square. If necessary, give answers in simplest radical form.

4*x*2 – 20*x* = –9

Module 18 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the equation using the Quadratic Formula. If necessary, give answers in simplest radical form.

2*x*2 + 9x + 3 = 0

Module 18 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the equation using the Quadratic Formula. If necessary, give answers in simplest radical form.

2*x*2 + 9x + 3 = 0

Module 18 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the equation using the Quadratic Formula. If necessary, give answers in simplest radical form.

2*x*2 + 9x + 3 = 0

Module 18 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the equation using the Quadratic Formula. If necessary, give answers in simplest radical form.

2*x*2 + 9x + 3 = 0

Module 18 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Choose a method to solve the equation and then solve. If necessary, give answers in simplest radical form.

5*x*2 – 4*x* – 5 = 0

Module 18 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Choose a method to solve the equation and then solve. If necessary, give answers in simplest radical form.

5*x*2 – 4*x* – 5 = 0

Module 18 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Choose a method to solve the equation and then solve. If necessary, give answers in simplest radical form.

5*x*2 – 4*x* – 5 = 0

Module 18 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Choose a method to solve the equation and then solve. If necessary, give answers in simplest radical form.

5*x*2 – 4*x* – 5 = 0

Module 19 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A nozzle in a statue along the edge of a pool shoots a stream of water into the pool from a height of 5 feet above the pool’s surface. The stream of water reaches a maximum height of
6 feet at a horizontal distance of 2 feet from the statue.

Write a function that gives the path of the arc of water.

At what horizontal distance from the statue does the water go into the pool? Give your answer to the nearest tenth of a foot.

Module 19 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A nozzle in a statue along the edge of a pool shoots a stream of water into the pool from a height of 5 feet above the pool’s surface. The stream of water reaches a maximum height of
6 feet at a horizontal distance of 2 feet from the statue.

Write a function that gives the path of the arc of water.

At what horizontal distance from the statue does the water go into the pool? Give your answer to the nearest tenth of a foot.

Module 19 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A nozzle in a statue along the edge of a pool shoots a stream of water into the pool from a height of 5 feet above the pool’s surface. The stream of water reaches a maximum height of
6 feet at a horizontal distance of 2 feet from the statue.

Write a function that gives the path of the arc of water.

At what horizontal distance from the statue does the water go into the pool? Give your answer to the nearest tenth of a foot.

Module 19 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A nozzle in a statue along the edge of a pool shoots a stream of water into the pool from a height of 5 feet above the pool’s surface. The stream of water reaches a maximum height of
6 feet at a horizontal distance of 2 feet from the statue.

Write a function that gives the path of the arc of water.

At what horizontal distance from the statue does the water go into the pool? Give your answer to the nearest tenth of a foot.

Module 19 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Given the standard form of a quadratic equation

*f*(*x*) = *ax*2 + *bx* + *c*, explain how it is similar to the vertex form *f*(x) = *a*(*x* – *h*)2 + *k*.

Module 19 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Given the standard form of a quadratic equation

*f*(*x*) = *ax*2 + *bx* + *c*, explain how it is similar to the vertex form *f*(x) = *a*(*x* – *h*)2 + *k*.

Module 19 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Given the standard form of a quadratic equation

*f*(*x*) = *ax*2 + *bx* + *c*, explain how it is similar to the vertex form *f*(x) = *a*(*x* – *h*)2 + *k*.

Module 19 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Given the standard form of a quadratic equation

*f*(*x*) = *ax*2 + *bx* + *c*, explain how it is similar to the vertex form *f*(x) = *a*(*x* – *h*)2 + *k*.

Module 19 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the quadratic function *f*(*x*) = *x*2 + *x* – 6 in intercept form. Identify the *x*-intercepts, the axis of symmetry, and the vertex of the graph of the function.

Module 19 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the quadratic function *f*(*x*) = *x*2 + *x* – 6 in intercept form. Identify the *x*-intercepts, the axis of symmetry, and the vertex of the graph of the function.

Module 19 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the quadratic function *f*(*x*) = *x*2 + *x* – 6 in intercept form. Identify the *x*-intercepts, the axis of symmetry, and the vertex of the graph of the function.

Module 19 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the quadratic function *f*(*x*) = *x*2 + *x* – 6 in intercept form. Identify the *x*-intercepts, the axis of symmetry, and the vertex of the graph of the function.

Module 19 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is it easier to find the *x*-intercepts for *f*(*x*) or *g*(*x*) ? Which

function has the greater positive *x*-intercept?

*f*(*x*) = *x*2 – 5*x* – 14

*g*(*x*) = (*x* – 6)(*x* + 8)

Module 19 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is it easier to find the *x*-intercepts for *f*(*x*) or *g*(*x*) ? Which

function has the greater positive *x*-intercept?

*f*(*x*) = *x*2 – 5*x* – 14

*g*(*x*) = (*x* – 6)(*x* + 8)

Module 19 Lesson 5 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use second differences to determine whether the data can

be modeled by a quadratic function, and explain how you

know.

|  |  |
| --- | --- |
| *x* | *f*(*x*) |
| 1 | 4 |
| 2 | 10 |
| 3 | 20 |
| 4 | 34 |
| 5 | 52 |

Module 19 Lesson 5 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use second differences to determine whether the data can

be modeled by a quadratic function, and explain how you

know.

|  |  |
| --- | --- |
| *x* | *f*(*x*) |
| 1 | 4 |
| 2 | 10 |
| 3 | 20 |
| 4 | 34 |
| 5 | 52 |

Module 20 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The table shows the mass, in grams, of a newborn baby for a short period of time, in days, after birth. Does a linear, exponential, or quadratic function best model the data? Support your answer using the shape of the scatter plot and the coefficient of determination.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mass (g) | 0 | 3 | 6 | 9 | 12 |
| Time (days since birth) | 7000 | 6500 | 6600 | 6800 | 7000 |

Module 20 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The table shows the mass, in grams, of a newborn baby for a short period of time, in days, after birth. Does a linear, exponential, or quadratic function best model the data? Support your answer using the shape of the scatter plot and the coefficient of determination.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mass (g) | 0 | 3 | 6 | 9 | 12 |
| Time (days since birth) | 7000 | 6500 | 6600 | 6800 | 7000 |

Module 20 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The table shows the mass, in grams, of a newborn baby for a short period of time, in days, after birth. Does a linear, exponential, or quadratic function best model the data? Support your answer using the shape of the scatter plot and the coefficient of determination.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mass (g) | 0 | 3 | 6 | 9 | 12 |
| Time (days since birth) | 7000 | 6500 | 6600 | 6800 | 7000 |

Module 20 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The table shows the mass, in grams, of a newborn baby for a short period of time, in days, after birth. Does a linear, exponential, or quadratic function best model the data? Support your answer using the shape of the scatter plot and the coefficient of determination.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mass (g) | 0 | 3 | 6 | 9 | 12 |
| Time (days since birth) | 7000 | 6500 | 6600 | 6800 | 7000 |

Module 20 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Revenue in dollars can be modeled by *R*(*x*) = 18*x*, where *x* is

the number of units sold. Costs are modeled by

*C*(*x*) = 800 + 13*x*.

Find the profit function *P*(*x*) = (*R* – *C*)(*x*).

Module 20 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Revenue in dollars can be modeled by *R*(*x*) = 18*x*, where *x* is

the number of units sold. Costs are modeled by

*C*(*x*) = 800 + 13*x*.

Find the profit function *P*(*x*) = (*R* – *C*)(*x*).

Module 20 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Revenue in dollars can be modeled by *R*(*x*) = 18*x*, where *x* is

the number of units sold. Costs are modeled by

*C*(*x*) = 800 + 13*x*.

Find the profit function *P*(*x*) = (*R* – *C*)(*x*).

Module 20 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Revenue in dollars can be modeled by *R*(*x*) = 18*x*, where *x* is

the number of units sold. Costs are modeled by

*C*(*x*) = 800 + 13*x*.

Find the profit function *P*(*x*) = (*R* – *C*)(*x*).

Module 20 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the system using a graphing calculator.

$$\left\{\begin{array}{c}f\left(x\right)= \frac{1}{2}x^{2}-1\frac{1}{2}x\\f\left(x\right)= -3x+14\end{array}\right.$$

Module 20 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the system using a graphing calculator.

$$\left\{\begin{array}{c}f\left(x\right)= \frac{1}{2}x^{2}-1\frac{1}{2}x\\f\left(x\right)= -3x+14\end{array}\right.$$

Module 20 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the system using a graphing calculator.

$$\left\{\begin{array}{c}f\left(x\right)= \frac{1}{2}x^{2}-1\frac{1}{2}x\\f\left(x\right)= -3x+14\end{array}\right.$$

Module 20 Lesson 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the system using a graphing calculator.

$$\left\{\begin{array}{c}f\left(x\right)= \frac{1}{2}x^{2}-1\frac{1}{2}x\\f\left(x\right)= -3x+14\end{array}\right.$$

Module 20 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The perimeter of the base of a rectangular box is 10 inches. The height of the box equals the length of the base.

Write a function that gives the volume of the box.

State the domain of the volume function.

Find the function’s maximum value to the nearest 0.1 in3.

Module 20 Lesson 4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The perimeter of the base of a rectangular box is 10 inches. The height of the box equals the length of the base.

Write a function that gives the volume of the box.

State the domain of the volume function.

Find the function’s maximum value to the nearest 0.1 in3.

Module 21 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A group of 250 students from Grades 4 to 7 were surveyed

and provided with two flavor choices, A and B, for a new juice. It was found that 35 of the 50 Grade 6 students surveyed preferred Choice A.

Use two methods to determine the joint relative frequency of Choice B among Grade 6 students.

Module 21 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A group of 250 students from Grades 4 to 7 were surveyed

and provided with two flavor choices, A and B, for a new juice. It was found that 35 of the 50 Grade 6 students surveyed preferred Choice A.

Use two methods to determine the joint relative frequency of Choice B among Grade 6 students.

Module 21 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In a survey of high school students, the possible choices for each respondent are Yes, No, and Undecided. In the No column of a two-way frequency table, the values from

Grade 9 through Grade 12, in order, were 34, 42, 31, and 37.

Given an answer of No, what is the relative frequency that a Grade 10 student made this choice?

Module 21 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In a survey of high school students, the possible choices for each respondent are Yes, No, and Undecided. In the No column of a two-way frequency table, the values from

Grade 9 through Grade 12, in order, were 34, 42, 31, and 37.

Given an answer of No, what is the relative frequency that a Grade 10 student made this choice?

Module 22 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hank recorded the high temperature, in degrees Fahrenheit, for 7 days.

{60, 59, 72, 52, 77, 75, 67}

What are the mean, median, and interquartile range for the data set?

Is the mean an appropriate measure of center for the data set? Why or why not?

Module 22 Lesson 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hank recorded the high temperature, in degrees Fahrenheit, for 7 days.

{60, 59, 72, 52, 77, 75, 67}

What are the mean, median, and interquartile range for the data set?

Is the mean an appropriate measure of center for the data set? Why or why not?

Module 22 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tom analyzes his last nine quiz scores to see if his grade in the class is accurate. The quiz scores were 78, 65, 93, 89, 87, 69, 70, 90, and 81.

a) Display the quiz data using a box plot or histogram.

b) Determine the median and mean.

c) What is the lowest score Tom can have on the 10th quiz and still have an average quiz score of 80 (after rounding)?

Module 22 Lesson 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tom analyzes his last nine quiz scores to see if his grade in the class is accurate. The quiz scores were 78, 65, 93, 89, 87, 69, 70, 90, and 81.

a) Display the quiz data using a box plot or histogram.

b) Determine the median and mean.

c) What is the lowest score Tom can have on the 10th quiz and still have an average quiz score of 80 (after rounding)?