

تربية
وتعليم

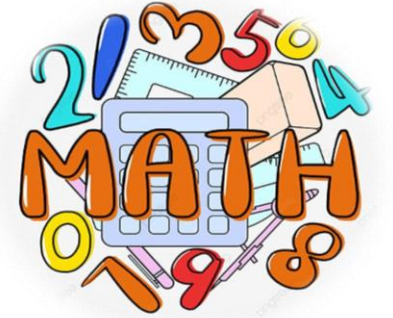
نرتقي بالتعليم.. لنصنع التغيير

نصنع أجيالاً ترسم المستقبل
بطموحات وتطلعات لا تعرف المستحيل

مدرسة مدينة زايد
نطاق

Grade 8

EOT₂ - Coverage

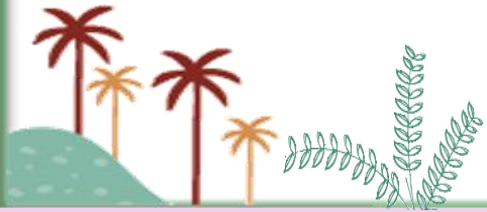


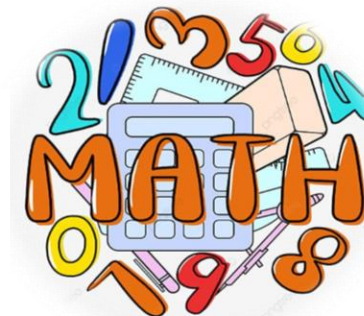
Without answer

School Principal
Hamda Almansoori



Teacher
Souad Atef





Academic Year	2025/2026
العام الدراسي	
Term	2
الفصل	
Subject	Mathematics/Reveal
المادة	الرياضيات / ريفيل
Grade	8
الصف	
Stream	General
المسار	العام
Number of MCQ عدد الأسئلة الموضوعية	15
Marks of MCQ درجة الأسئلة الموضوعية	60

Number of FRQ عدد الأسئلة المقالية	5
Marks per FRQ الدرجات للأسئلة المقالية	40
Type of All Questions نوع كافة الأسئلة	الأسئلة الموضوعية / MCQ الأسئلة المقالية / FRQ
Maximum Overall Grade الدرجة القصوى الممكنة	100
Exam Duration - مدة الامتحان	90 minutes
Mode of Implementation - طريقة التطبيق	Paper-Based
Calculator	Not Allowed
الألة الحاسبة	غير مسموحة



1	Determine whether or not a relation is a function by identifying the number of outputs assigned to each input.	1 to 5	261
2	Generate function tables from function rules and use the sets of ordered pairs to graph the functions.	1 to 6	271
3	Write linear functions from graphs, tables, and verbal descriptions by finding the rate of change and initial value.	1 to 4	283
4	Compare functions that are represented in different ways using their initial values and rates of change.	1 to 4	291 , 292
5	Determine if a function, represented in different forms, is a linear or nonlinear function by using the rate of change, shape of the graph, or structure of the equation.	1 to 8	303 , 304
6	Recognize a qualitative graph and interpret the scenario it represents as well as create a qualitative graph.	1 to 5	311 , 312
7	Write equations in slope-intercept form in order to graph them and use the graphs to solve a system of equations.	1 to 5	329
8	Use the slope-intercept form of lines in order to determine whether a system of equations has zero, one, or infinitely many solutions.	1 to 10	339
9	Find the distance between two points on a coordinate plane using the Pythagorean Theorem.	1 to 6	427
10	Use elimination to solve a system of linear equations.	1 to 11	361

11	Write and solve a system of equations that models a real-world scenario.	1 to 5	373
12	Use the relationships between angles formed by two parallel lines cut by a transversal to find the measures of missing angles.	1 to 10	391 , 392
13	Find the measures of interior and exterior angles in a triangle by using relationships between these angles.	1 to 8	403 , 404
14	Find the measures of the sides of a right triangle using the Pythagorean Theorem and square roots.	1 to 6	415
15	Determine if a triangle is a right triangle by using the converse of the Pythagorean Theorem.	1 to 8	421
16	Use the relationships between angles formed by two parallel lines cut by a transversal to find the measures of missing angles.	1 to 10	391 , 392
17	Determine if a function, represented in different forms, is a linear or nonlinear function by using the rate of change, shape of the graph, or structure of the equation.	1 to 8	303 , 304
18	Use elimination to solve a system of linear equations.	1 to 11	361
19	Use substitution to solve a system of linear equations, including those that have zero or infinitely many solutions.	1 to 11	349
20	Compare functions that are represented in different ways using their initial values and rates of change.	1 to 4	291 , 292

1

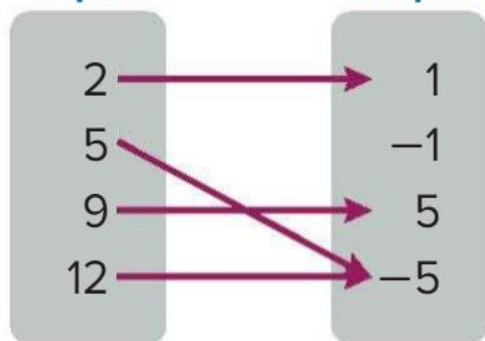
Determine whether or not a relation is a function by identifying the number of outputs assigned to each input.

1 to 5

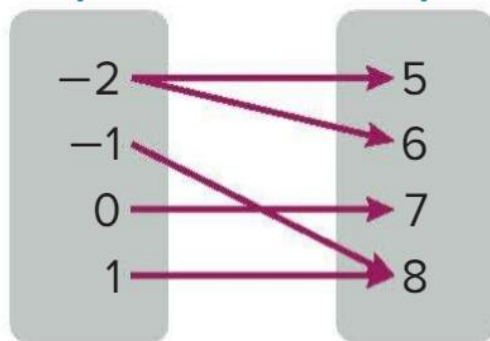
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Determine whether each relation is a function. Explain.

1. **Input** **Output**



2. **Input** **Output**



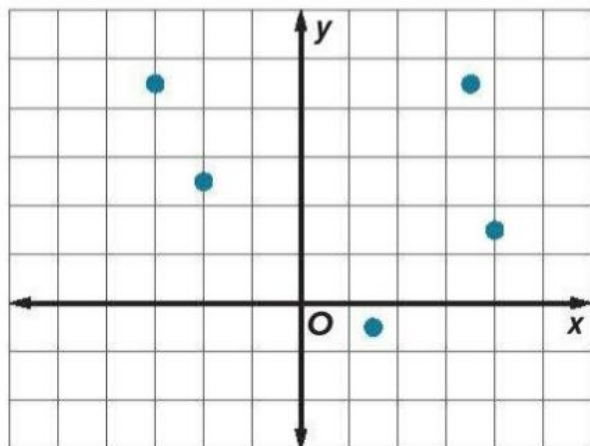
3.

Input, x	Output, y
-10	4
-5	4
0	4
5	4

4.

Input, x	Output, y
1	2
1	3
1	4
1	5

5.



Complete the function table for each function given. (Example 1)

1. $y = 2.5x - 8$

Input, x	Output, y
-5	
0	
5	
10	

2. $y = -5x - 1$

Input, x	Output, y
-2	
-1	
0	
1	

3. $y = \frac{1}{2}x + 3$

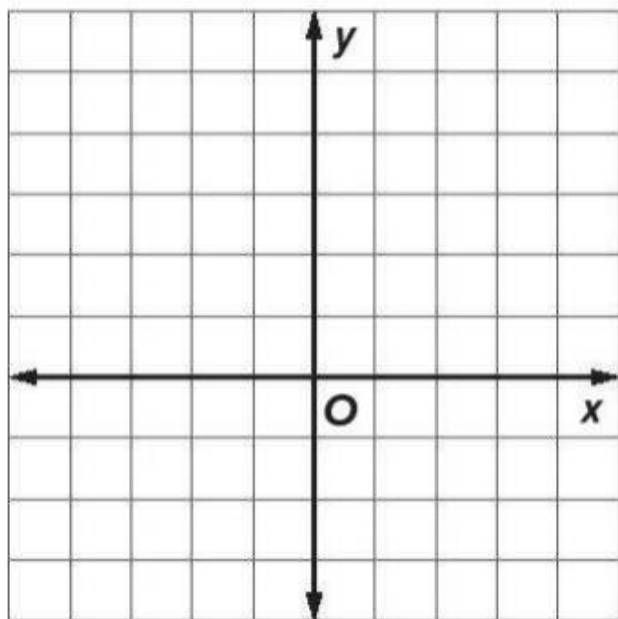
Input, x	Output, y
-2	
2	
6	
10	

4. A single-engine plane can travel up to 140 miles per hour. The total number of miles m is represented by the function $m = 140h$, where h is the number of hours traveled. Determine appropriate input values for this situation. Then complete the function table for $m = 140h$. (Example 2)

Input, h	Output, m

5. Create a function table for the function $y = -2x + 1$. Then graph the function.
(Example 3)

Input, x	Output, y
-2	
-1	
0	
1	



6. **Multiselect** Select all of the possible types of numbers that are appropriate input values for the given situation.

A flower-delivery service charges \$39.95 per flower arrangement and \$2.99 for delivery. The total cost y is represented by the function $y = 39.95x + 2.99$, where x is the number of flower arrangements.

- ☐ whole numbers
- ☐ integers
- ☐ rational numbers
- ☐ positive integers
- ☐ negative numbers
- ☐ only zero

1. A cleaning service charges an initial fee plus an hourly rate. The total cost for different numbers of hours, including the initial fee, is shown on the graph. Find and interpret the rate of change and initial value. Then write the equation of the function in the form $y = mx + b$. (Example 1)



2. The table shows the distance Penelope is from the park as she walks to soccer practice. Assume the relationship between the two quantities is linear. Find and interpret the rate of change and initial value. Then write the equation of the function in the form $y = mx + b$. (Example 2)

Time (min), x	Distance (m), y
5	1,930
10	1,380
15	830
20	280

3. A roller skating rink charges a skate rental fee and an hourly rate to skate. The total cost to skate for 2 hours is \$9.50 and for 5 hours is \$18.50. Assume the relationship is linear. Find and interpret the rate of change and initial value. Then write the equation of the function in the form $y = mx + b$, where x represents the number of hours and y represents the total cost.

(Example 3)

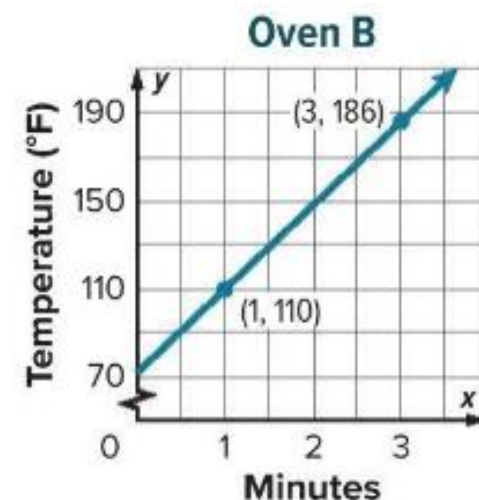
Test Practice

4. **Open Response** A movie theater offers a reward program that charges a yearly membership fee and a discounted rate per movie ticket. The total cost for a reward program member to see 5 movies is \$40 and the total cost for 12 movies is \$75. Assume the relationship is linear. Write the equation of the function in the form $y = mx + b$, where x represents the number of movies and y represents the total cost.

1. Gennaro is considering two job offers as a part-time sales person. Company A will pay him \$12.50 for each item he sells, plus a base salary of \$500 at the end of the month. The amount Company B will pay him at the end of the month is shown in the table. Compare the functions' initial values and rates of change. Then determine how much more Gennaro would make at Company A if he sells 28 items by the end of the month. [\(Example 1\)](#)

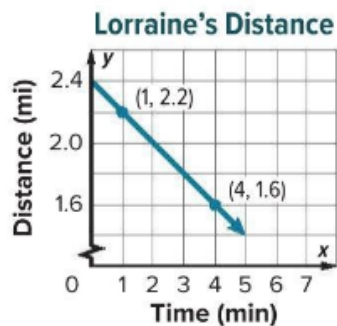
Number of Items Sold, x	Total Earned (\$), y
5	425
10	500
15	575

2. The temperature in two different ovens increased at a steady rate. The temperature in oven A is represented by the equation $y = 25x + 72$, where x represents the number of minutes and y represents the temperature in degrees Fahrenheit. The temperature of oven B is shown in the graph. Compare the functions' initial values and rates of change. Then determine how much greater the temperature in oven B will be than oven A after 8 minutes. [\(Example 1\)](#)



Test Practice

- 3. Open Response** Lorraine and Chila were riding their bikes to school. Lorraine's distance away from the school is shown in the graph. Chila's distance away from the school is shown in the table. Compare the functions' initial values and rates of change. Then determine Lorraine's and Chila's distance from school after 7 minutes. (Example 2)

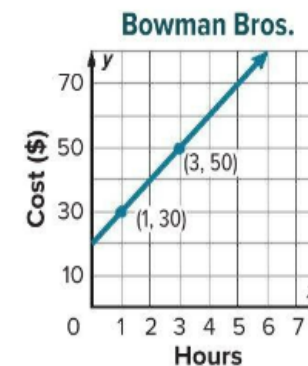


Chila's Distance	
Time (min), x	Distance (mi), y
1	1.5
2	1.3
3	1.1

- 4.** Samuel is planning a walking tour of his city and is researching three different tour-guide companies. The cost y of each company is a linear function of the number of hours x that someone spends on the tour. The prices for three different companies are shown. Samuel plans his tour for 6 hours and wants to spend the lesser amount of money. From which company should he choose to do his walking tour?

Hidden Treasures
Walking Tour
 $y = 9x + 25$

Road-Less-Traveled Tours	
Hours, x	Cost (\$), y
1	12
2	24



5 Determine if a function, represented in different forms, is a linear or nonlinear function by using the rate of change, shape of the graph, or structure of the equation.

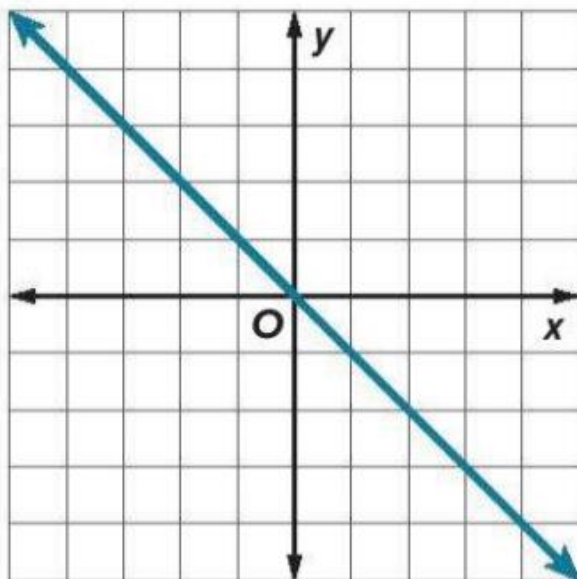
1 to 8

pg.303 , 304

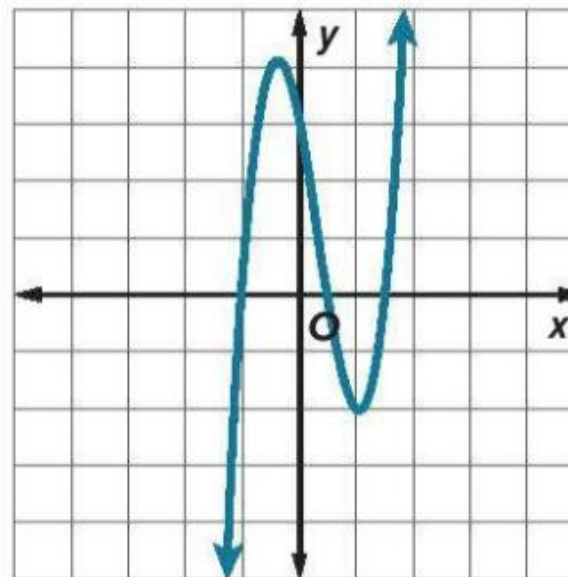
Determine whether each graph represents a linear or nonlinear function.

Explain. (Example 1)

1.



2.

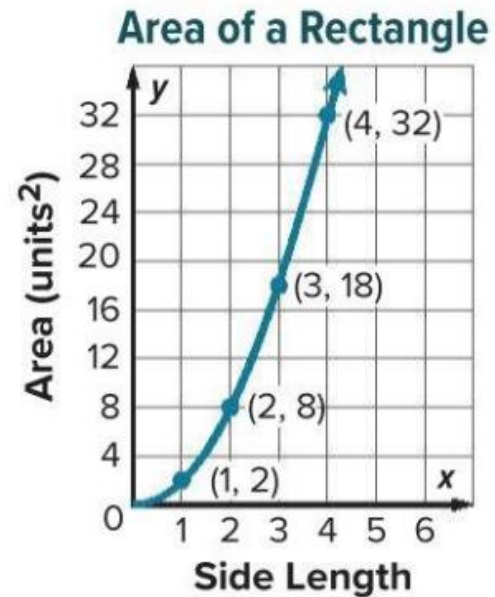


5 Determine if a function, represented in different forms, is a linear or nonlinear function by using the rate of change, shape of the graph, or structure of the equation.

1 to 8

pg.303 , 304

3. A rectangle has side lengths s and $2s$. Its area is represented by the expression $2s^2$. The area of the rectangle is a function of its side length. Does this situation represent a linear or nonlinear function? Explain. (Example 2)



Determine whether each table represents a linear or nonlinear function. Explain. (Example 3)

4.

Number of Items Sold, x	Total Earned (\$), y
1	25
2	45
3	60

5.

Time (min), x	Distance (mi), y
15	2.2
30	4.4
45	6.6

Determine whether each equation represents a linear or nonlinear function.

Explain. (Examples 4 and 5)

6. $y + 7x = 2$

7. $y = \sqrt{8x}$

Test Practice

8. Multiselect Select all equations that represent a linear function.

☐ $y = 7^2$

☐ $y = \frac{-4}{x}$

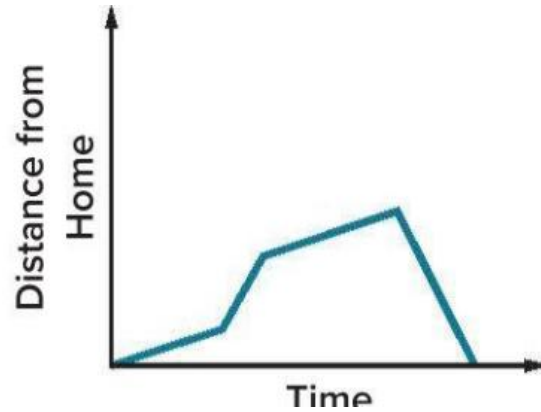
☐ $y + \frac{1}{2}x = 9$

☐ $9 = y - \sqrt[3]{2x}$

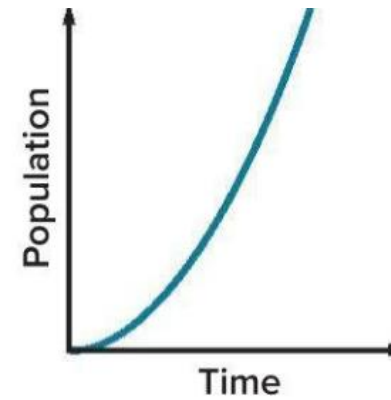
☐ $y = x^2$

☐ $2.3 = y - 5.8x$

1. The graph displays the distance Wesley was from home as he ran in preparation for his cross-country meet. Describe the change in distance over time. [\(Example 1\)](#)



2. The graph displays the population of bacteria in a petri dish. Describe the change in population over time. [\(Example 1\)](#)



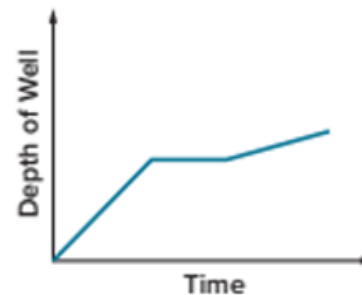
3. Ryan's heart rate was steady before exercising. While exercising, his heart rate increased rapidly and then steadied. During cool down, his heart rate decreased slowly then lowered quickly until becoming steady again. Sketch a qualitative graph to represent the situation. Determine if the graph is linear or nonlinear and where the graph is increasing or decreasing.

(Example 2)



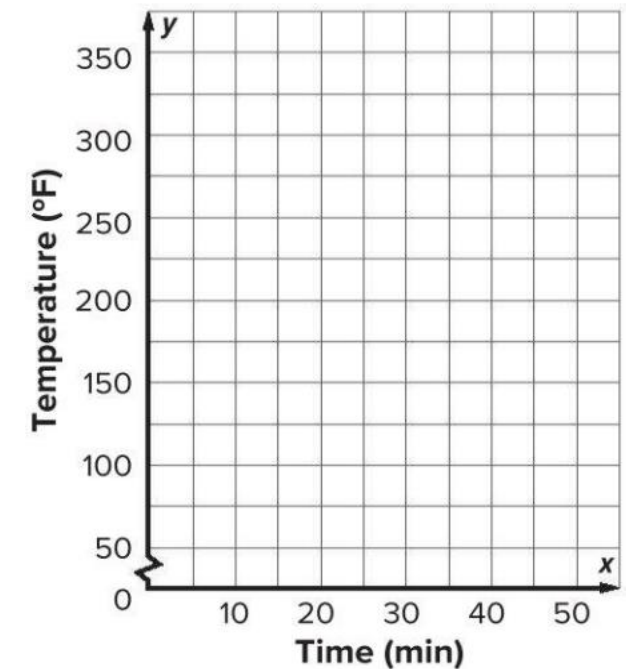
Test Practice

5. **Open Response** A well is being dug on a piece of land. The graph displays the depth of the well over time. Describe the change in the depth of the well over time.



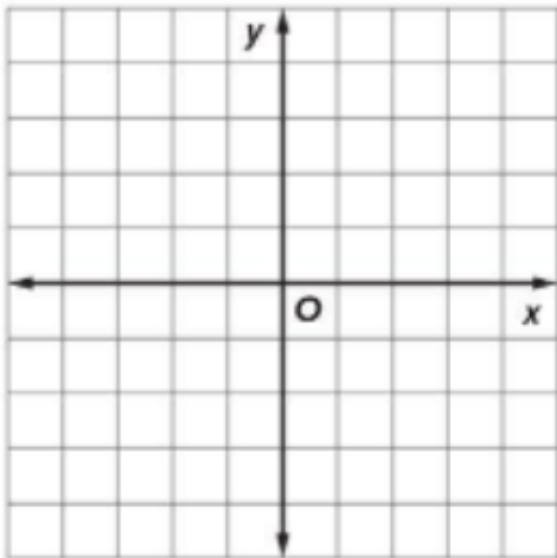
4. An oven is being preheated. The temperature starts at 75°F and increases at a constant rate for 8 minutes until it reaches the desired temperature, 350°F . It remains the same temperature for 27 minutes. Then the temperature decreases at a constant rate for 5 minutes until it reaches 175° , where it remains steady to keep the food warm. Sketch a graph to represent the situation.

(Example 3)

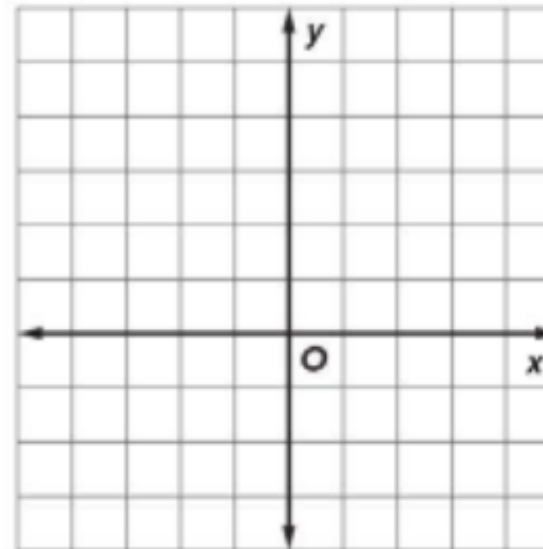


Solve each system of equations by graphing. Check the solution. (Examples 1–4)

1. $y = x + 4$
 $y = -2x - 2$

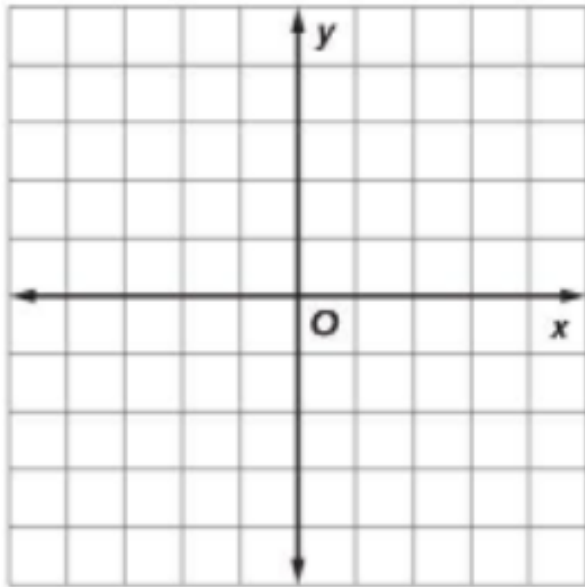


2. $y - \frac{1}{2}x = -1$
 $y = \frac{1}{2}x + 4$

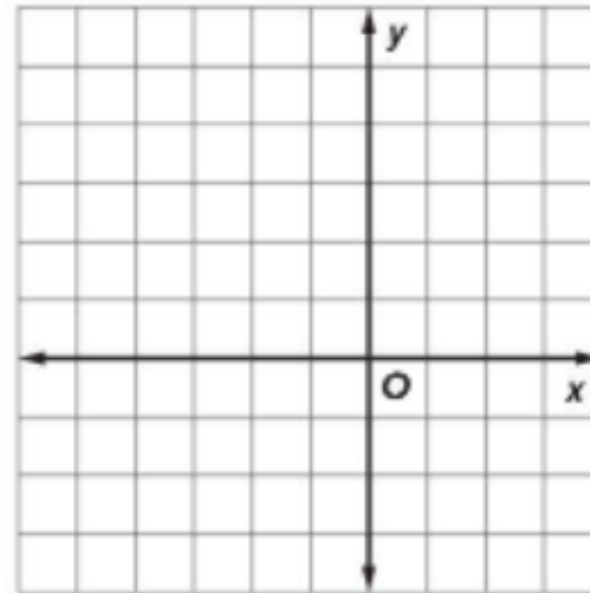


Solve each system of equations by graphing. Check the solution. (Examples 1–4)

3. $y + \frac{1}{4}x = 1$
 $y = -\frac{1}{4}x + 1$

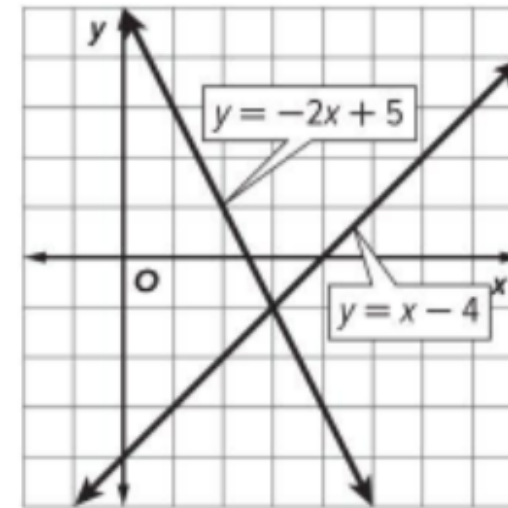


4. $x = -3$
 $y = 5$



Test Practice

- 5. Grid** The graph of a system of equations is shown. Plot and label the solution of the system on the graph.



Determine if each system of equations has *no solution*, *one solution*, or *an infinite number of solutions*. (Examples 1–3)

1. $-5x + y = -1$
 $-5x + y = 10$

2. $y = -4x + 9$
 $y = \frac{2}{3}x - 5$

3. $y + 1 = 3x$
 $2y = 6x - 2$

4. $y = -\frac{4}{5}x$
 $4x + 5y = 0$

5. $y = \frac{1}{2}x + 6$
 $2y = x - 8$

6. $y = -2x$
 $y = x + 3$

A system of equations consists of two lines. A line passes through each pair of points. Determine whether the line through the first pair of points intersects the line through the second pair of points. (Example 4)

7. $(0, -5)$ and $(2, -4)$;
 $(4, -3)$ and $(6, -2)$

8. $(0, 4)$ and $(1, 7)$;
 $(-1, -5)$ and $(5, 13)$

9. $(0, 2)$ and $(9, -1)$;
 $(12, 7)$ and $(-6, -5)$

Test Practice

10. Equation Editor Enter values for a and b , so that the system of equations has one solution.

$$y = -6x - 4$$

$$y = ax + b$$

$a =$

$b =$

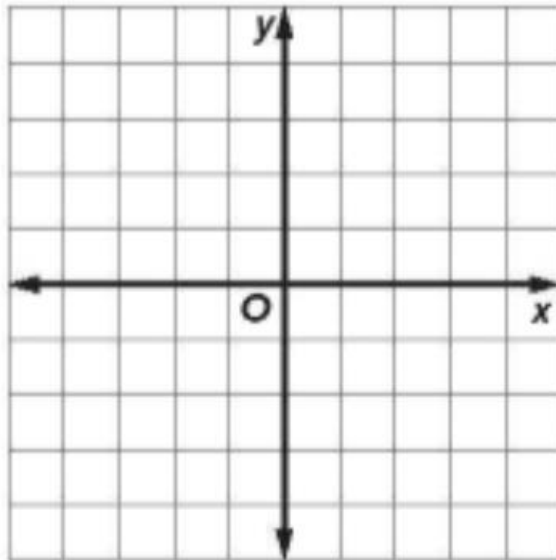
The Equation Editor interface includes a keypad with the following symbols and numbers:

- Navigation: Left arrow, Right arrow, Undo, Redo, and a calculator icon.
- Row 1: 1, 2, 3, +, -, ×, ÷
- Row 2: 4, 5, 6, <, ≤, =, ≥, >
- Row 3: 7, 8, 9, $\frac{x}{n}$, x^n , (), ||, $\sqrt{x}$, $\sqrt[n]{x}$, π
- Row 4: 0, ., -

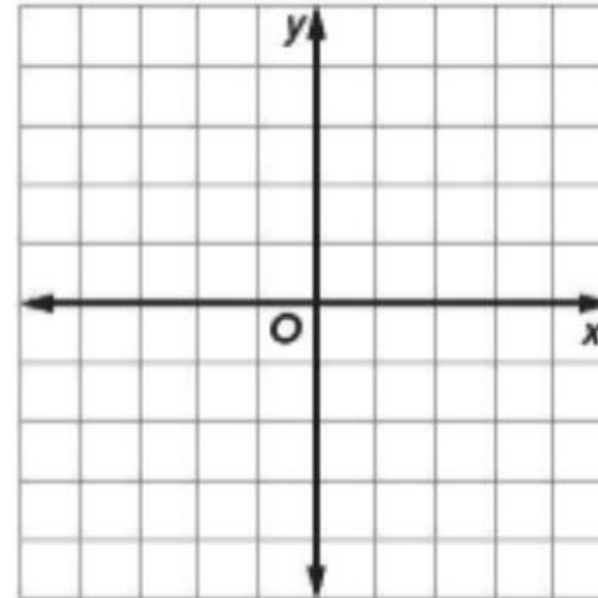
Find the distance, c , between each pair of points on the coordinate plane.

Round to the nearest tenth if necessary. ([Example 1](#))

1. $(-4, -3), (2, 1)$



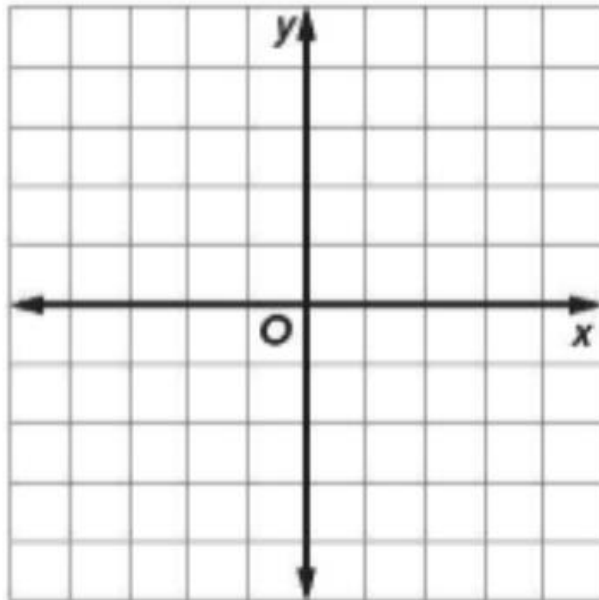
2. $(0, 2), (5, -2)$



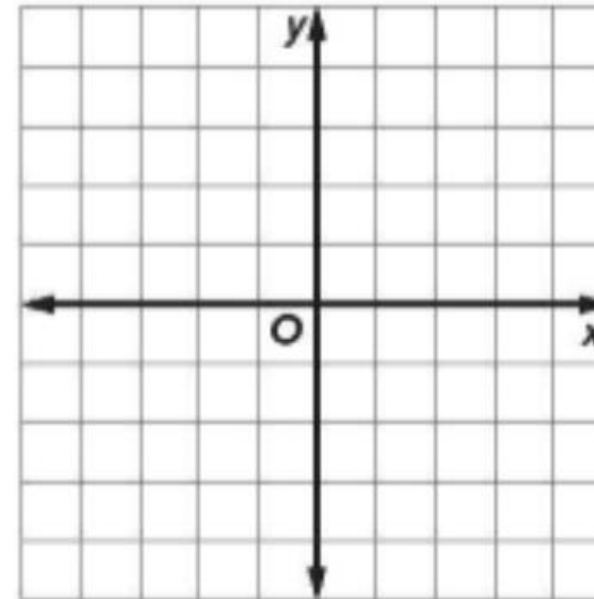
Find the distance, c , between each pair of points on the coordinate plane.

Round to the nearest tenth if necessary. (Example 1)

3. $(0, 0), (-4, -3)$



4. $(-3, 4), (2, -3)$



5. An archaeologist at a dig sets up a coordinate system using string. Two similar artifacts are found—one at position $(1, 4)$ and the other at $(5, 2)$. How far apart were the two artifacts? Round to the nearest tenth of a unit if necessary.

Test Practice

6. **Equation Editor** The coordinates of points A and B are $(-7, 5)$ and $(4, -3)$, respectively. What is the distance, in units, between the points? Round to the nearest tenth.

← → ↶ ↷ ✖

1	2	3
4	5	6
7	8	9
0	.	-

Solve each system of equations by elimination. Check the solution.

(Examples 1–4)

1. $-6x + y = -3$
 $5x - 2y = -8$

4. $5x + 5y = -10$
 $2x - 3y = -9$

7. $3x - 5y = 11$
 $x - 4y = -8$

2. $-3x + 12y = 18$
 $-6x + 24y = 36$

5. $x + 3y = 6$
 $x - 3y = 12$

8. $-18x + 6y = -6$
 $-24x + 6y = -18$

3. $-5x - 2y = -12$
 $3x + 2y = 8$

6. $6x + 4y = 6$
 $6x + 2y = 12$

9. $-4x - 8y = 8$
 $3x - 5y = 16$

10. Solve the system of equations by elimination.

$$y = -\frac{1}{3}x - 5$$

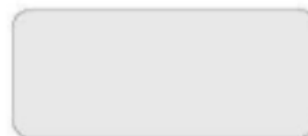
$$\frac{1}{3}x + 5y = -9$$

Test Practice

11. Open Response What is the solution of the system of equations?

$$-2x + 4y = -10$$

$$2x + 2y = -8$$



Write and solve a system of equations that represents each situation. Interpret the solution. (Examples 1–4)

1. The sum of two numbers is 20.5. Their difference is 6.5. Find the two numbers.

2. Tadeo volunteered at the library 6 times as many hours over the weekend as Dylan. Together, they volunteered a total of 14 hours. How many hours did each person volunteer over the weekend?

Write and solve a system of equations that represents each situation. Interpret the solution. (Examples 1–4)

- 3.** Tiana placed two orders for flowers and bushes. The first order was for 24 flowers and 6 bushes. The total of the first order was \$144. The second order was for 18 flowers and 3 bushes. The total of the second order was \$90. What is the cost of each plant?

- 4.** Mrs. Adesso wants to take her class on a trip to either the science center or natural history museum. The science center charges \$7 per student, plus \$75 for a guided tour. The natural history museum charges \$8 per student, plus \$50 for a guided tour. For what number of students is the cost of the trip the same at each museum?

Write and solve a system of equations that represents each situation. Interpret the solution. (Examples 1–4)

Test Practice

- 5. Open Response** It costs \$5 per hour to rent a snowboard from a certain ski rental company, plus a \$50 deposit. Another ski rental company charges \$10 per hour to rent a snowboard, plus a \$25 deposit. For what number of hours is the cost to rent a snowboard the same at each company? What is the cost of renting a snowboard for this number of hours?

Hours, x :

Cost, y :

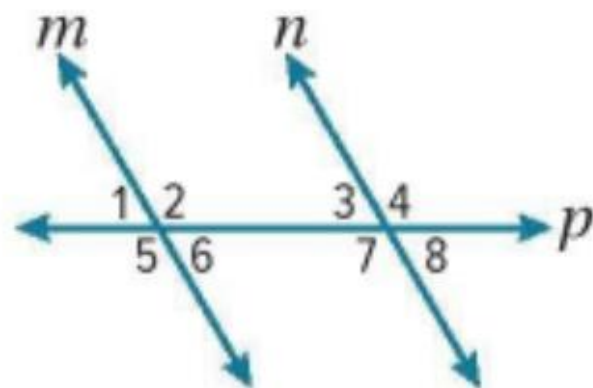
For Exercises 1–4, use the figure at the right. In the figure, line m is parallel to line n . For each pair of angles, classify the relationship in the figure as *alternate interior*, *alternate exterior*, or *corresponding*. (Examples 1 and 2)

1. $\angle 2$ and $\angle 7$

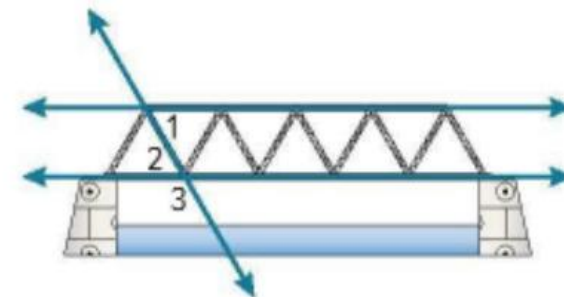
2. $\angle 1$ and $\angle 3$

3. $\angle 4$ and $\angle 5$

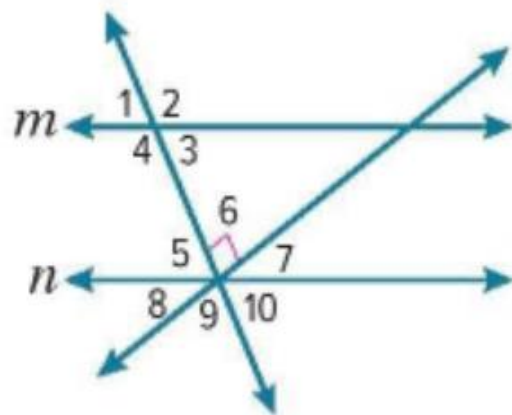
4. $\angle 5$ and $\angle 7$



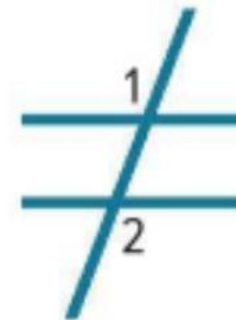
5. Arturo is designing a bridge for science class using parallel supports for the top and bottom beam. Find $m\angle 2$ and $m\angle 3$ if $m\angle 1 = 60^\circ$. Justify your answer. (Example 3)



6. In the figure, line m is parallel to line n . The measure of $\angle 3$ is 58° . What is the measure of $\angle 7$? (Example 4)

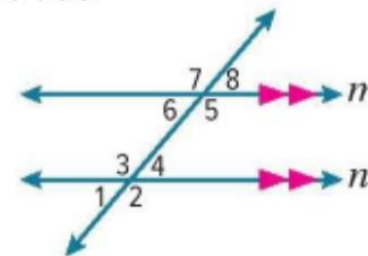


7. The symbol below is an equal sign with a slash through it. It is used to represent *not equal to* in math, as in $x \neq 5$. If $m\angle 1 = 108^\circ$, classify the relationship between $\angle 1$ and $\angle 2$. Then find $m\angle 2$. Assume the equal sign consists of parallel lines.



Test Practice

8. **Multiselect** In the figure, line m and line n are parallel. Select all of the statements that are true.



- ☐ $\angle 1$ and $\angle 8$ are alternate exterior angles.
- ☐ $\angle 3$ and $\angle 7$ are corresponding angles.
- ☐ $\angle 2$ and $\angle 8$ are corresponding angles.
- ☐ $\angle 4$ and $\angle 6$ are alternate interior angles.
- ☐ $\angle 5$ and $\angle 7$ are corresponding angles.

12 Use the relationships between angles formed by two parallel lines cut by a transversal to find the measures of missing angles.

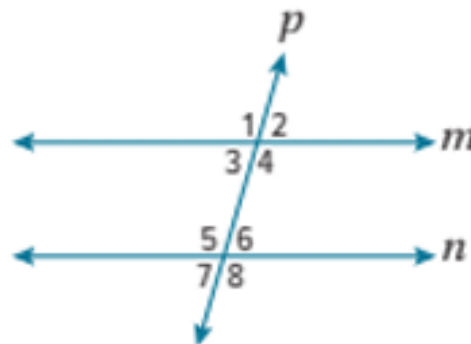
1 to 10

pg.391,392

Apply

9. Angles A and B are corresponding angles formed by two parallel lines cut by a transversal. If $m\angle A = 4x^\circ$ and $m\angle B = (3x + 7)^\circ$, find the value of x . Explain.

10. In the figure, line m is parallel to line n . If $m\angle 3 = (7x - 10)^\circ$ and $m\angle 6 = (5x + 10)^\circ$, what are the measures of $\angle 3$ and $\angle 6$?



Find the value of x in each object. (Example 1)

1.

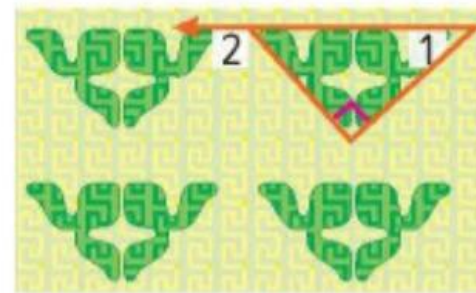


2.

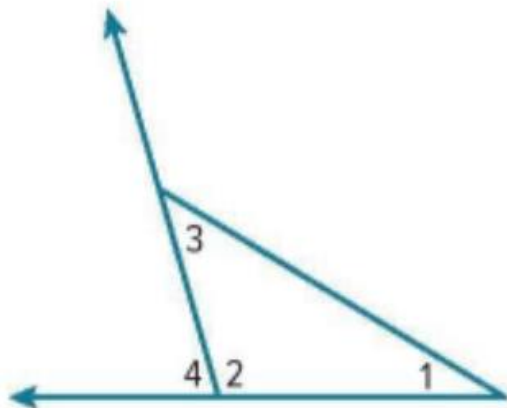


3. In $\triangle FGH$, the measures of angles F , G , and H , respectively, are in the ratio 4:4:10. Find the measure of each angle. (Example 2)

4. In the knitting pattern, $m\angle 1 = 42^\circ$. Find the measure of $\angle 2$. (Example 3)

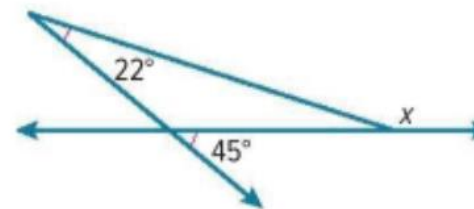


5. In the figure, $m\angle 4 = 74^\circ$ and $m\angle 3 = 43^\circ$. Find the measures of $\angle 1$ and $\angle 2$. (Example 4)

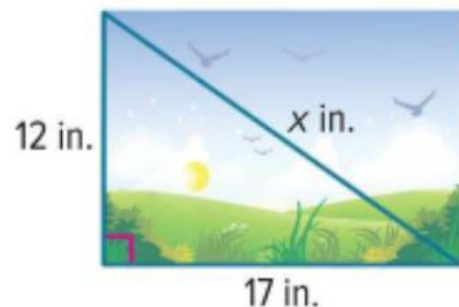


Test Practice

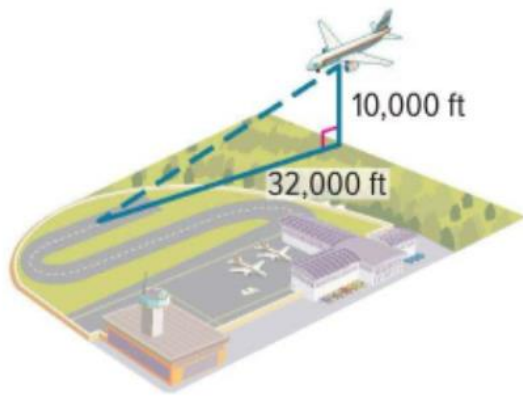
6. **Open Response** What is the measure of $\angle x$, in degrees, in the figure shown?



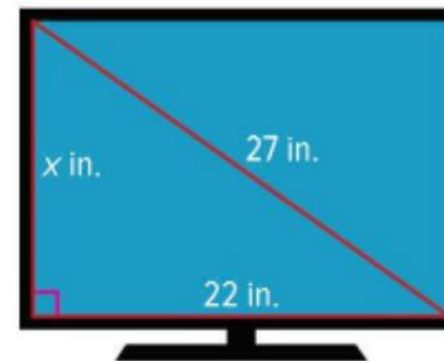
1. What is the length of a diagonal of a rectangular picture whose sides are 12 inches by 17 inches? Round to the nearest tenth. (Example 1)



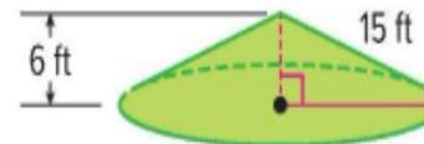
2. How far is the airplane from the runway? Round to the nearest tenth. (Example 2)



3. The diagonal of a television measures 27 inches. If the width is 22 inches, calculate its height to the nearest inch. (Example 3)



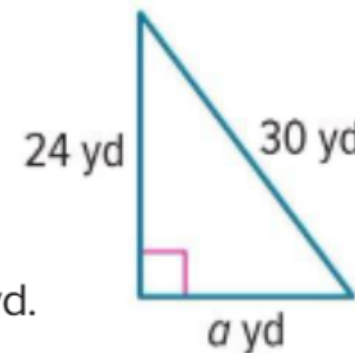
4. The distance from the top of the cone to the edge is 15 feet. The height of the cone is 6 feet. What is the radius of the cone? Round to the nearest tenth. (Example 4)



5. What is the perimeter of a right triangle if the hypotenuse is 15 centimeters and one of the legs is 9 centimeters?

Test Practice

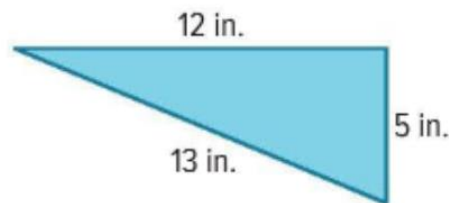
6. **Multiselect** Select all of the following statements that are true about the right triangle shown.



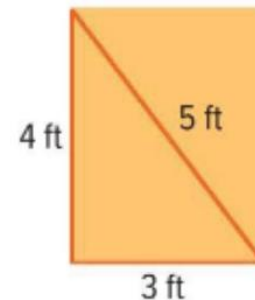
- ☐ The hypotenuse is 30 yd.
- ☐ The missing leg is 18 yd.
- ☐ The missing leg is 24 yd.
- ☐ The formula $24^2 + a^2 = 30^2$ can be used to find the missing leg measure.
- ☐ The formula $30^2 + a^2 = 24^2$ can be used to find the missing leg measure.

1. Three cities form a triangle. Tom measures the distances between the three cities on a map. The distances between the three cities are 45 miles, 56 miles, and 72 miles. Is the triangle formed by the three cities a right triangle? (Examples 1 and 2)

3. Allie wants to make sure that the pieces of cloth for a costume are right triangles. Determine whether the triangle is a right triangle. (Examples 1 and 2)



2. A carpenter is measuring a cabinet to ensure the sides create a right angle. Determine whether the triangle is a right triangle. (Examples 1 and 2)



4. In order to ensure that the roof consists of right angles, an architect measures the diagonal to create a triangle. If the dimensions of the triangle are 9.5 feet, 16 feet, and 18.5 feet, is the triangle a right triangle? (Examples 1 and 2)

5. Elyse is building a square raised-bed garden with 4-foot sides. She measured the diagonal to be $4\sqrt{2}$ feet. Is her garden square? Explain.

7. Three islands form a triangle. Island A is $7\frac{1}{2}$ miles from Island B and 18 miles from Island C. Island B is $19\frac{1}{2}$ miles from Island C. Is the triangle formed a right triangle? Explain.

6. The distance between each base on a softball field is 60 feet. Maddie is placing the bases and measures the distance between home plate and second base. She determines the distance to be 80 feet. Are the bases at right angles? Explain.

Test Practice

8. **Multiselect** Select all of the following that *cannot* be the measures of sides of a right triangle.

- ☐ 6 cm, 8 cm, 10 cm
- ☐ 14 cm, 18 cm, 20 cm
- ☐ 20 cm, 21 cm, 29 cm
- ☐ 6 cm, 6 cm, 6 cm
- ☐ 10 cm, 24 cm, 26 cm

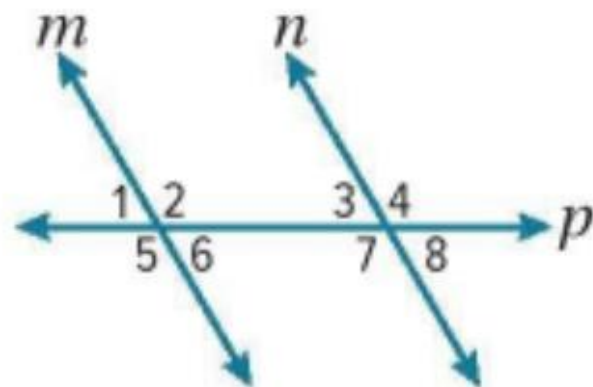
For Exercises 1–4, use the figure at the right. In the figure, line m is parallel to line n . For each pair of angles, classify the relationship in the figure as *alternate interior*, *alternate exterior*, or *corresponding*. (Examples 1 and 2)

1. $\angle 2$ and $\angle 7$

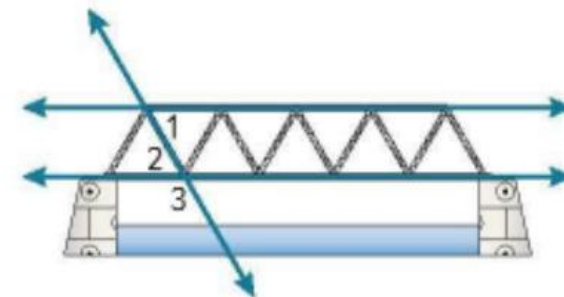
2. $\angle 1$ and $\angle 3$

3. $\angle 4$ and $\angle 5$

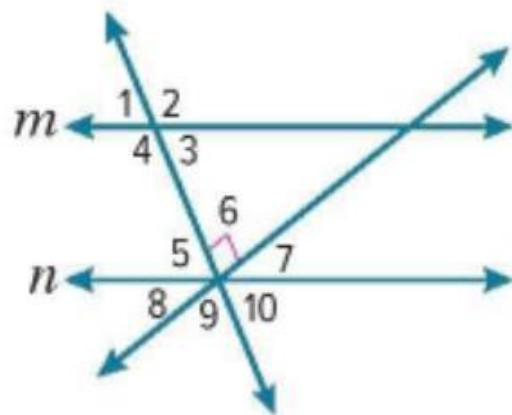
4. $\angle 5$ and $\angle 7$



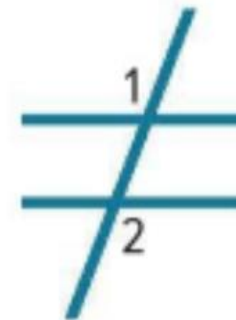
5. Arturo is designing a bridge for science class using parallel supports for the top and bottom beam. Find $m\angle 2$ and $m\angle 3$ if $m\angle 1 = 60^\circ$. Justify your answer. (Example 3)



6. In the figure, line m is parallel to line n . The measure of $\angle 3$ is 58° . What is the measure of $\angle 7$? (Example 4)

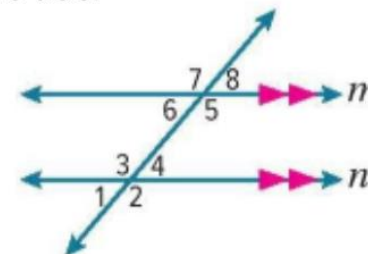


7. The symbol below is an equal sign with a slash through it. It is used to represent *not equal to* in math, as in $x \neq 5$. If $m\angle 1 = 108^\circ$, classify the relationship between $\angle 1$ and $\angle 2$. Then find $m\angle 2$. Assume the equal sign consists of parallel lines.



Test Practice

8. **Multiselect** In the figure, line m and line n are parallel. Select all of the statements that are true.



- ☐ $\angle 1$ and $\angle 8$ are alternate exterior angles.
- ☐ $\angle 3$ and $\angle 7$ are corresponding angles.
- ☐ $\angle 2$ and $\angle 8$ are corresponding angles.
- ☐ $\angle 4$ and $\angle 6$ are alternate interior angles.
- ☐ $\angle 5$ and $\angle 7$ are corresponding angles.

16 Use the relationships between angles formed by two parallel lines cut by a transversal to find the measures of missing angles.

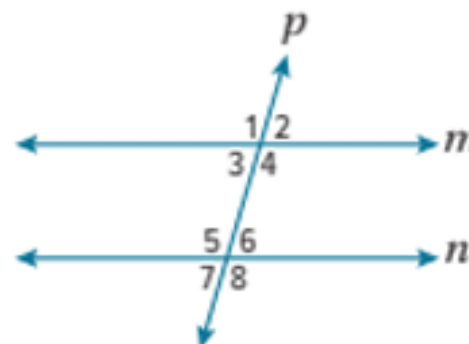
1 to 10

pg.391,392

Apply

9. Angles A and B are corresponding angles formed by two parallel lines cut by a transversal. If $m\angle A = 4x^\circ$ and $m\angle B = (3x + 7)^\circ$, find the value of x . Explain.

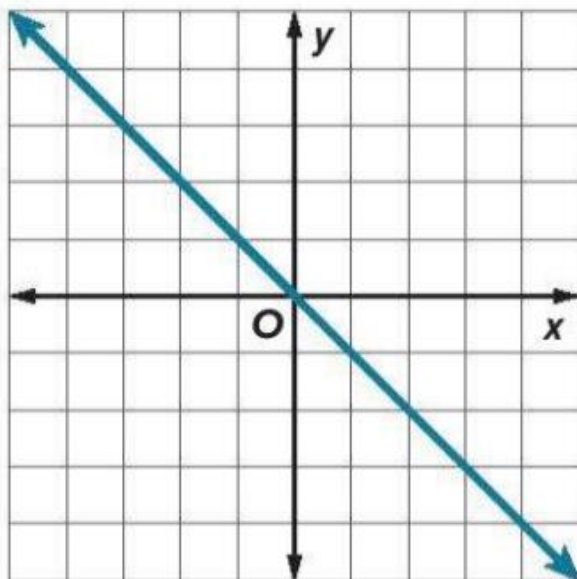
10. In the figure, line m is parallel to line n . If $m\angle 3 = (7x - 10)^\circ$ and $m\angle 6 = (5x + 10)^\circ$, what are the measures of $\angle 3$ and $\angle 6$?



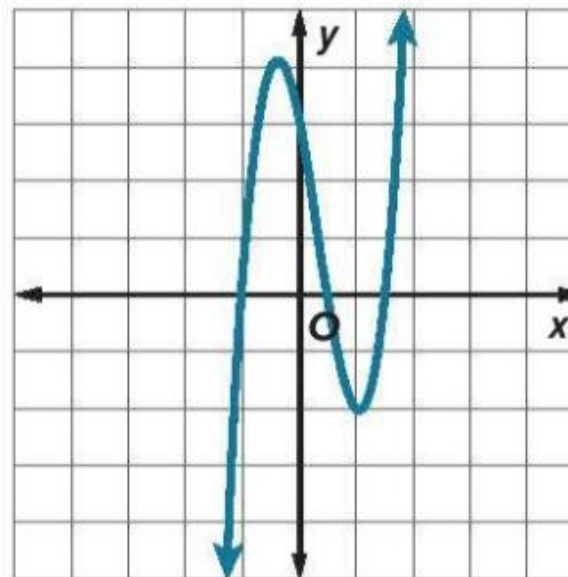
Determine whether each graph represents a linear or nonlinear function.

Explain. (Example 1)

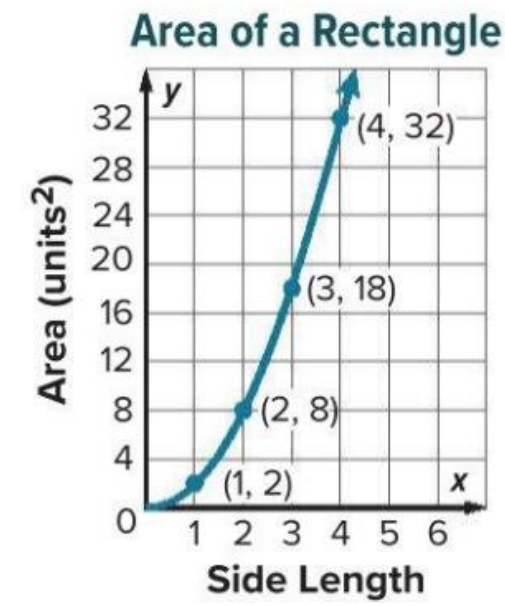
1.



2.



3. A rectangle has side lengths s and $2s$. Its area is represented by the expression $2s^2$. The area of the rectangle is a function of its side length. Does this situation represent a linear or nonlinear function? Explain. (Example 2)



Determine whether each table represents a linear or nonlinear function. Explain. (Example 3)

4.

Number of Items Sold, x	Total Earned (\$), y
1	25
2	45
3	60

5.

Time (min), x	Distance (mi), y
15	2.2
30	4.4
45	6.6

Determine whether each equation represents a linear or nonlinear function.

Explain. (Examples 4 and 5)

6. $y + 7x = 2$

7. $y = \sqrt{8x}$

Test Practice

8. Multiselect Select all equations that represent a linear function.

☐ $y = 7^2$

☐ $y = \frac{-4}{x}$

☐ $y + \frac{1}{2}x = 9$

☐ $9 = y - \sqrt[3]{2x}$

☐ $y = x^2$

☐ $2.3 = y - 5.8x$

Solve each system of equations by elimination. Check the solution.

(Examples 1–4)

1. $-6x + y = -3$
 $5x - 2y = -8$

4. $5x + 5y = -10$
 $2x - 3y = -9$

7. $3x - 5y = 11$
 $x - 4y = -8$

2. $-3x + 12y = 18$
 $-6x + 24y = 36$

5. $x + 3y = 6$
 $x - 3y = 12$

8. $-18x + 6y = -6$
 $-24x + 6y = -18$

3. $-5x - 2y = -12$
 $3x + 2y = 8$

6. $6x + 4y = 6$
 $6x + 2y = 12$

9. $-4x - 8y = 8$
 $3x - 5y = 16$

- 10.** Solve the system of equations by elimination.

$$y = -\frac{1}{3}x - 5$$

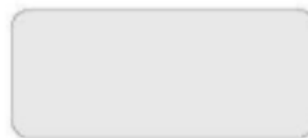
$$\frac{1}{3}x + 5y = -9$$

Test Practice

- 11. Open Response** What is the solution of the system of equations?

$$-2x + 4y = -10$$

$$2x + 2y = -8$$



Determine if each system of equations has *no solution*, *one solution*, or *an infinite number of solutions*. (Examples 1–3)

1. $-5x + y = -1$
 $-5x + y = 10$

2. $y = -4x + 9$
 $y = \frac{2}{3}x - 5$

3. $y + 1 = 3x$
 $2y = 6x - 2$

4. $y = -\frac{4}{5}x$
 $4x + 5y = 0$

5. $y = \frac{1}{2}x + 6$
 $2y = x - 8$

6. $y = -2x$
 $y = x + 3$

A system of equations consists of two lines. A line passes through each pair of points. Determine whether the line through the first pair of points intersects the line through the second pair of points. (Example 4)

7. $(0, -5)$ and $(2, -4)$;
 $(4, -3)$ and $(6, -2)$

8. $(0, 4)$ and $(1, 7)$;
 $(-1, -5)$ and $(5, 13)$

9. $(0, 2)$ and $(9, -1)$;
 $(12, 7)$ and $(-6, -5)$

Test Practice

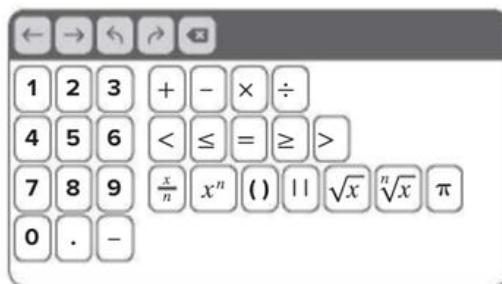
10. Equation Editor Enter values for a and b , so that the system of equations has one solution.

$$y = -6x - 4$$

$$y = ax + b$$

$a =$

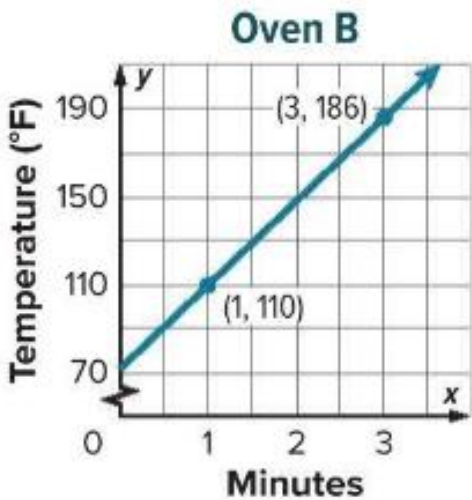
$b =$



1. Gennaro is considering two job offers as a part-time sales person. Company A will pay him \$12.50 for each item he sells, plus a base salary of \$500 at the end of the month. The amount Company B will pay him at the end of the month is shown in the table. Compare the functions' initial values and rates of change. Then determine how much more Gennaro would make at Company A if he sells 28 items by the end of the month. [\(Example 1\)](#)

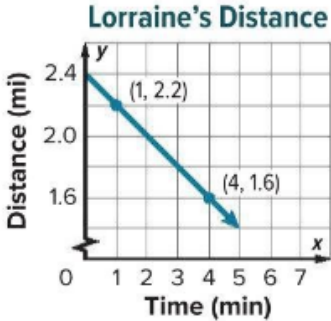
Number of Items Sold, x	Total Earned (\$), y
5	425
10	500
15	575

2. The temperature in two different ovens increased at a steady rate. The temperature in oven A is represented by the equation $y = 25x + 72$, where x represents the number of minutes and y represents the temperature in degrees Fahrenheit. The temperature of oven B is shown in the graph. Compare the functions' initial values and rates of change. Then determine how much greater the temperature in oven B will be than oven A after 8 minutes. [\(Example 1\)](#)



Test Practice

3. Open Response Lorraine and Chila were riding their bikes to school. Lorraine’s distance away from the school is shown in the graph. Chila’s distance away from the school is shown in the table. Compare the functions’ initial values and rates of change. Then determine Lorraine’s and Chila’s distance from school after 7 minutes. (Example 2)

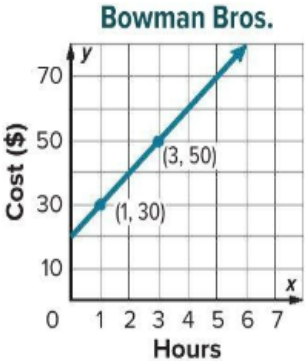


Chila’s Distance	
Time (min), x	Distance (mi), y
1	1.5
2	1.3
3	1.1

4. Samuel is planning a walking tour of his city and is researching three different tour-guide companies. The cost y of each company is a linear function of the number of hours x that someone spends on the tour. The prices for three different companies are shown. Samuel plans his tour for 6 hours and wants to spend the lesser amount of money. From which company should he choose to do his walking tour?

Hidden Treasures
Walking Tour
 $y = 9x + 25$

Road-Less-Traveled Tours	
Hours, x	Cost (\$), y
1	12
2	24



تربية
وتعليم

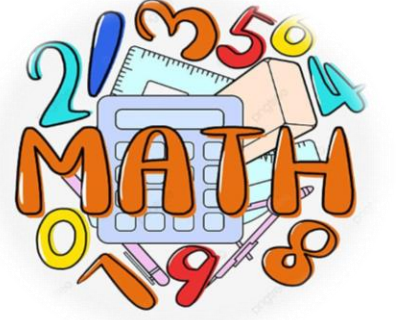
نرتقي بالتعليم.. لنصنع التغيير

نصنع أجيالاً ترسم المستقبل
بطموحات وتطلعات لا تعرف المستحيل

مدرسة مدينة زايد
نطاق

مع تمنياتي للجميع بالنجاح والتوفيق

معلمة المادة : سعاد عاطف



School Principal
Hamda Almansoori



Teacher
Souad Atef

