

10-1A Lesson Master

Questions on SPUR Objectives
See pages 669–671 for objectives.

USES Objective C

1. Elaine started the season running a 7-minute mile and is reducing her time by 5 seconds a week. Mark started with a 9-minute mile and is cutting his time by 15 seconds a week.

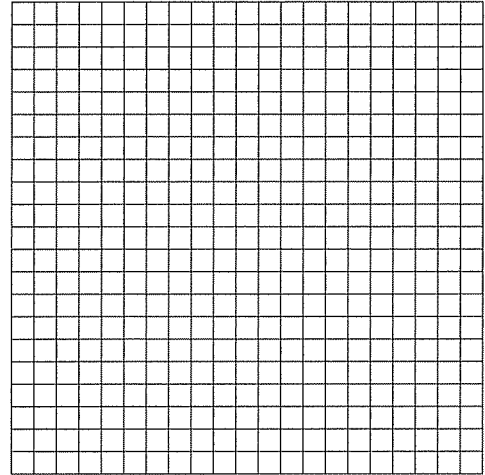
a. What equation describes Elaine's time in weeks?

b. What equation describes Mark's time in x weeks?

c. Graph the equations in Parts a and b above.

d. Using the graph, find the week the two runners are running a mile at the same pace.

e. What single equation expresses the time when the two runners are running a mile at the same pace?



2. Maple trees grow at a rate of about $12 \frac{\text{inches}}{\text{year}}$. Beech trees grow at a rate of about $6 \frac{\text{inches}}{\text{year}}$. Joe Red Cloud planted a 3-ft maple tree and a 7-ft beech tree.

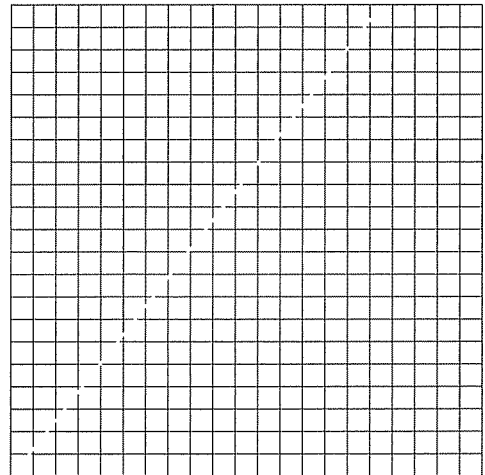
a. What equation describes the height of Joe's maple tree in x years?

b. What equation describes the height of Joe's beech tree in x years?

c. Graph the equations in Parts a and b above.

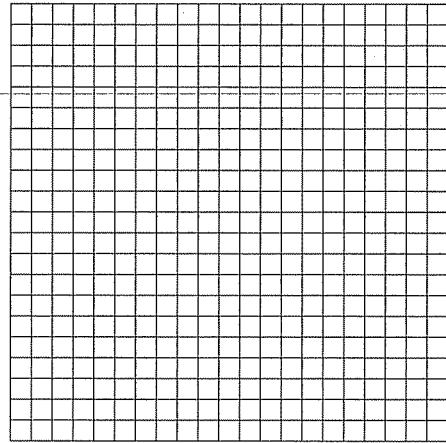
d. Using the graph, find the year the two trees will be the same height.

e. What single equation could be used to find the year the two trees will be the same height?



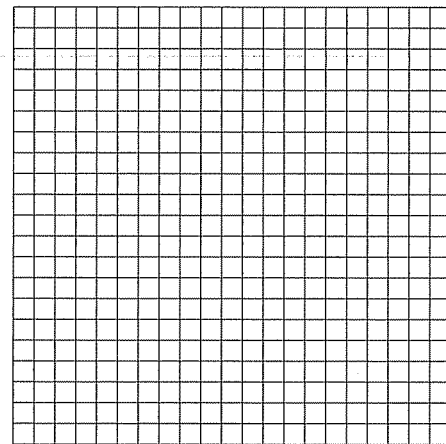
3. Consider the equation $5x + 3 = 3x - 1$.

- Graph $y = 5x + 3$ at the right.
- Graph $y = 3x - 1$ at the right.
- Find x by looking at the point of intersection of your two lines.



4. Consider the equation $-\frac{1}{2}x - 4 = \frac{1}{2}x - 8$.

- Graph $y = -\frac{1}{2}x - 4$ at the right.
- Graph $y = \frac{1}{2}x - 8$ at the right.
- Find x by looking at the point of intersection of your two lines.



5. AA Rent-a-Car Agency charges \$39.95 per day plus \$0.17 per mile. BB Cars-for-Rent Agency charges \$30.95 per day, plus \$0.42 per mile.

- Write the two equations that represent C , the cost of the plans for driving x miles.

b. What will it cost to drive 40 miles using an AA car? a BB car? _____

c. What will it cost to drive 30 miles using an AA car? a BB car? _____

d. What do your answers to Parts b and c tell you about the graphs of the equations from Part a?

e. Write the single equation that tells at how many miles the plans cost the same.

f. From which Agency should you rent a car if you will be driving 100 miles? _____

10-1B Lesson Master

VOCABULARY

1. Given the equations $T = 3 + 4m$ and $T = 4 - 0.2m$, what phrase describes setting up the equation $3 + 4m = 4 - 0.2m$? _____

USES Objective C: Translate situations of constant increase or decrease that lead to sentences of the form $ax + b = cx + d$ or $ax + b < cx + d$.

2. Armando's company is ordering CDs to give away as a promotion. MyMusic charges \$20 plus \$4 per box of a hundred CDs, while YourTunes charges \$30 plus \$2 per box.

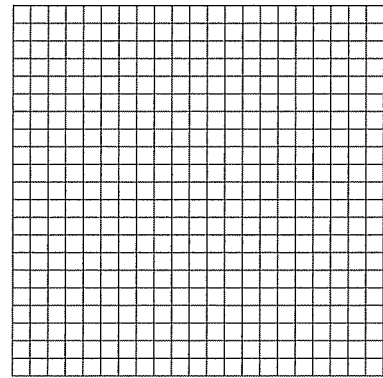
a. What equation describes MyMusic's charges for x boxes? _____

b. What equation describes YourTunes' charges for x boxes? _____

c. Graph the equations from Parts a and b above.

d. Looking at the graph, for how many boxes do the two companies' charges appear to be the same? _____

e. Write the equation that equates the values of C . _____



3. Dottie is on the fifteenth floor of a skyscraper and Lottie is on the 87th floor. Dottie starts up the stairs at the same time that Lottie starts down the stairs. Dottie's rate is 3 flights per minute, and Lottie's is 5 flights per minute.

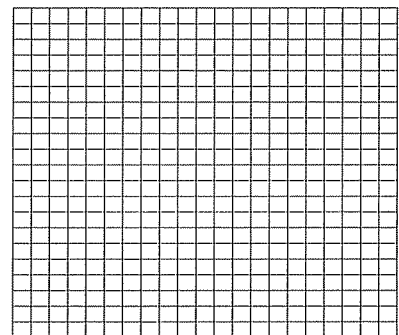
a. What equation describes what floor Lottie is on after x minutes? _____

b. What equation describes what floor Dottie is on after x minutes? _____

c. Graph the equations from Parts a and b above.

d. Looking at the graph, after about how many minutes does it appear the women will be on the same floor? _____

e. Write the equation that equates the values of F . _____



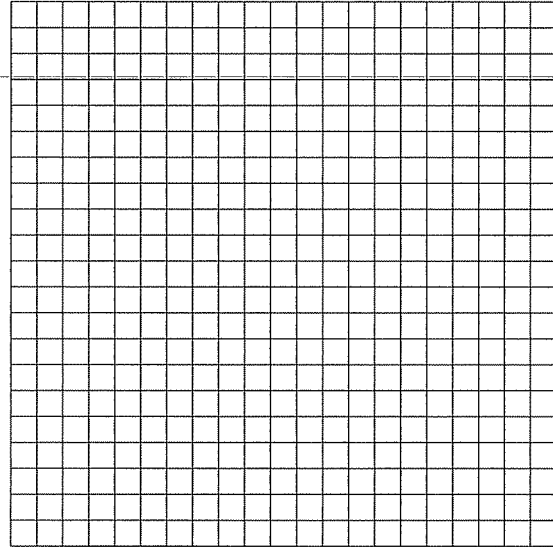
4. Consider the equation $-x + 6 = 3x - 2$.

a. Graph $y = -x + 6$.

b. Graph $y = 3x - 2$.

c. What seem to be the coordinates of the point of intersection of the two lines?

d. Show how to check the conclusion you made in Part c above.



e. What has this conclusion to do with the original equation?

10-2A Lesson Master**Questions on SPUR Objectives**
See pages 669–671 for objectives.**SKILLS** Objective A

In 1–6, solve and check the equation. Show your work.

1. $a + 3 = 2a$

2. $2b - 8 = 6b + 12$

3. $3 + \frac{1}{2}c = \frac{3}{4}c - 5$

4. $-6(k + 4) = 30(k - 2)$

5. $12 - f + 2 - 3f = 21 + 6f$

6. $\frac{h + 3}{2} = \frac{h - 2}{4}$

USES Objective C

In 7–9, write an equation for the situation. Then answer the question.

7. Three more than 2 times a number is the same as 7 less than 3 times the number. Find the number.

equation_____
answer

8. Sean began the month with \$25, but he spent \$1.50 a day on Internet time. Sally began the month with \$5.75, but she saved \$1.25 from her regular babysitting job each day. On which day,
- d
- , did they have the same amount of money?

equation_____
answer

9. Claire has \$2.75 and a number of dimes. Connie has \$3.50 and the same number of nickels. If the girls have the same amount of money, how many coins,
- c
- , does each girl have?

equation_____
answer

10-2B Lesson Master**SKILLS** Objective A: Solve equations of the form $ax + b = cx + d$.

In 1-10, solve. Show your work.

1. $k + 9 = 2k$

2. $4r + 6 = 9r - 4$

3. $16 - 6s = 12 + 2s$

4. $2(5x + 7) = -3x - 12$

5. $5.1u - 6.6 = 2.4 - 0.9u$

6. $2(j + 11) = -5(10 - 2j)$

7. $\frac{p+3}{2} = \frac{p-4}{3}$

8. $\frac{2}{3}w + \frac{1}{2} = w - \frac{1}{3}$

9. $5 + 24g + 11 = g + 9g - 26$

10. $\frac{2b-8}{-2} = \frac{3b-4}{5}$

USES

Objective C Translate situations of constant increase or decrease that lead to sentences of the form $ax + b = cx + d$ or $ax + b < cx + d$.

In 11–16, write an equation for each situation. Then answer the question.

11. Eight more than four times a number is the same as two less than five times the number. What is the number?

_____ equation

_____ answer

12. Five more than a number is the same as eighteen more than four-fifths times the number. What is the number?

_____ equation

_____ answer

13. On January 1, the Soccer Club had \$75 but anticipates a budget loss of \$5 per month. On the same day, the Volleyball Club had \$12 but anticipates a budget profit of \$4 per month. If these predictions hold true, after how many months will the two clubs have the same amount of money?

_____ equation

_____ answer

14. Membership fees at U-Train Gym are \$600 initially plus \$40 per month. At the Health Spot Gym, the fees are \$300 initially plus \$60 per month. After how many months will the total membership cost of the two gyms be equal?

_____ equation

_____ answer

15. The neighborhood movie store rents a game machine for \$12.50 plus \$1.50 per day. The downtown store rents the same machine for \$4 per day with no initial fee. After how many days will the total rental charge be the same for each store?

_____ equation

_____ answer

16. Ellen and Ron want to buy a video camera and accessories for \$350, splitting the cost equally between them. Ellen has \$98 already saved, and will save \$7 per week. Ron has \$120 already saved, and will save \$5 each week. In how many weeks will the two have enough money saved to buy the camera and accessories?

_____ equation

_____ answer

10-3A Lesson Master

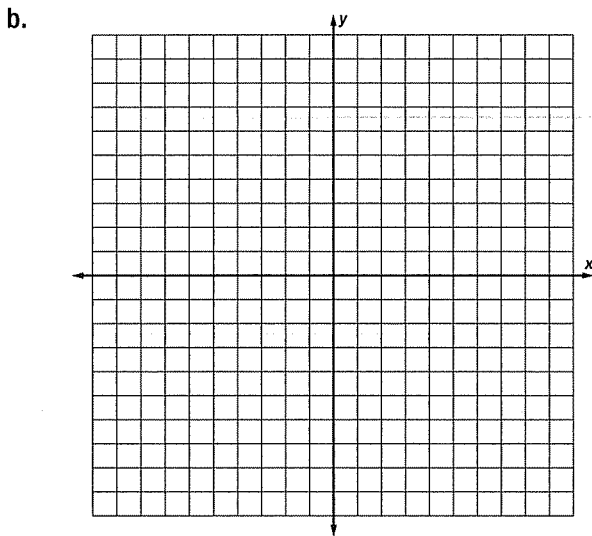
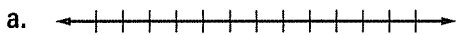
Questions on SPUR Objectives
See pages 669–671 for objectives.

REPRESENTATIONS Objective E

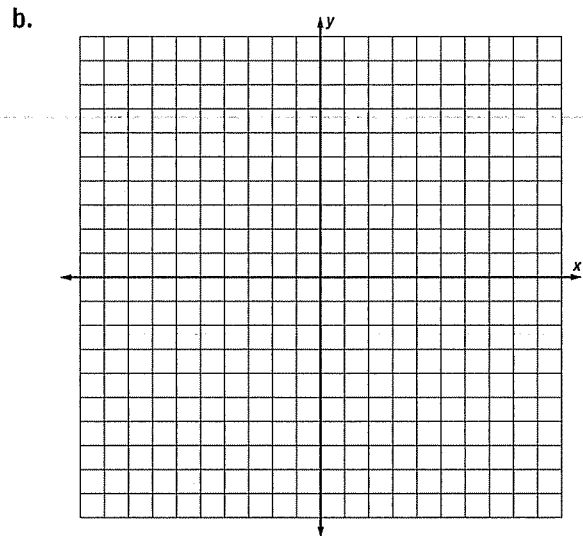
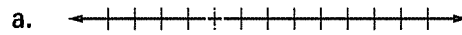
1. Given two real numbers g and f , what three possible relationships, only one of which is true, could exist between g and f ?

In 2 and 3, a. graph the inequality on a number line, and b. graph on the coordinate plane.

2. $y > 4$

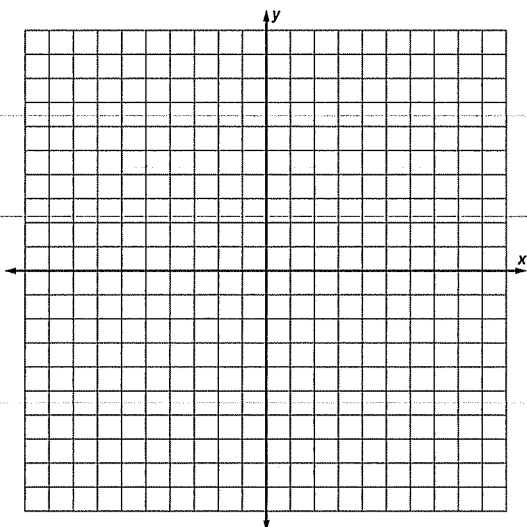


3. $3 \geq x$

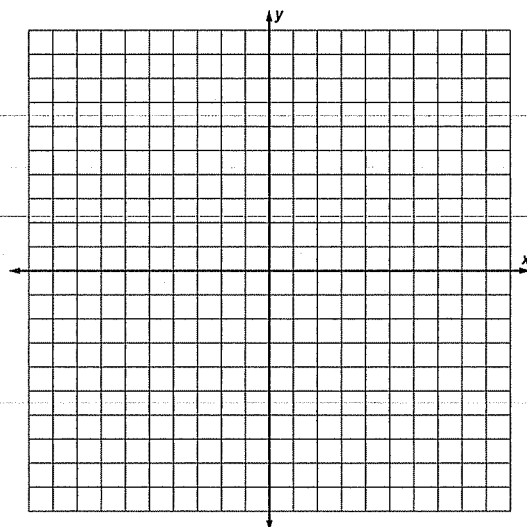


In 4–7, graph the inequality.

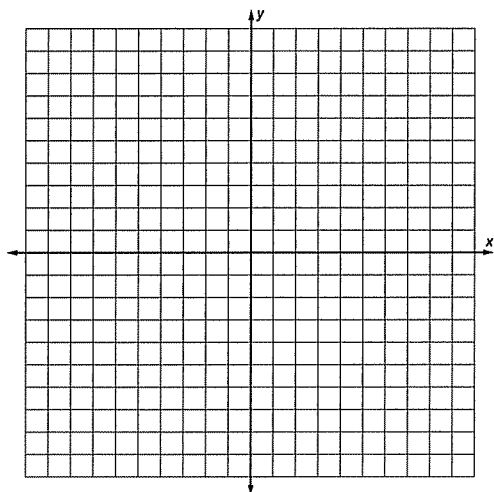
4. $y \leq 3x - 2$



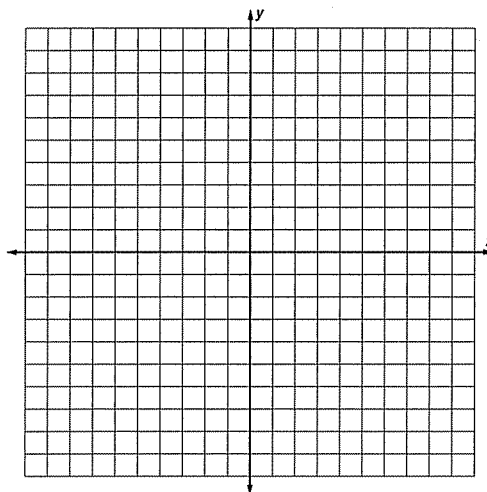
5. $y > -\frac{1}{3}x$



6. $2 - 3x \leq y$



7. $2x + 3y < 6$



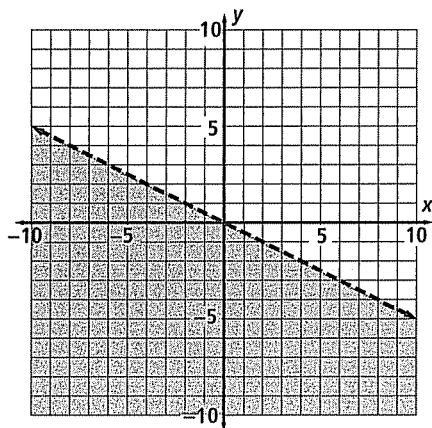
In 8-10, match the graph with the inequality.

8. $y > x$

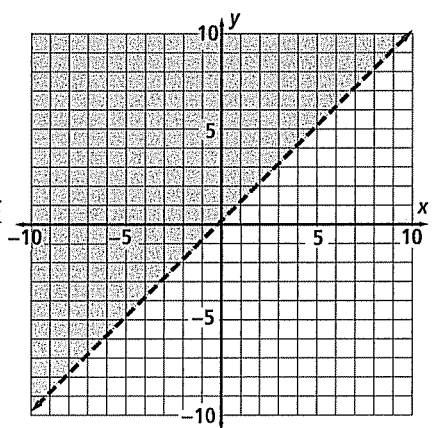
9. $y \leq 2x$

10. $y < -\frac{1}{2}x$

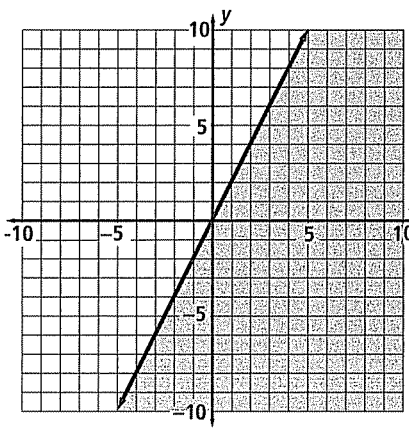
A



B



C



10-3B Lesson Master

REPRESENTATIONS Objective E: Graph inequalities of the form $y < ax + b$.

In 1-6, tell whether $x < y$, $x = y$, or $x > y$.

1. $x = \frac{85}{17}, y = 5$

2. $x = -\frac{1}{3}, y = -\frac{1}{\pi}$

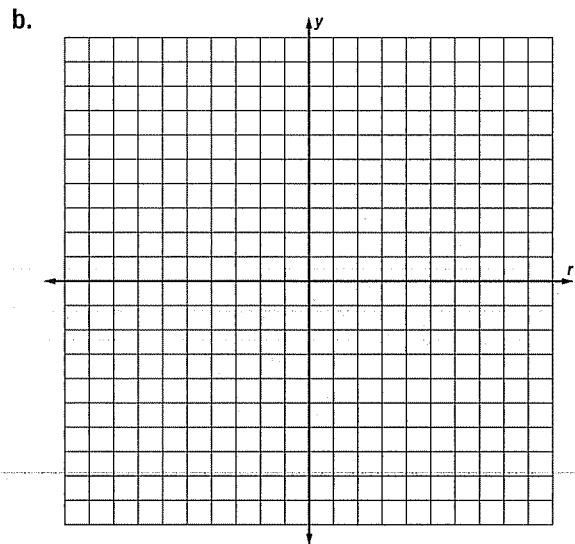
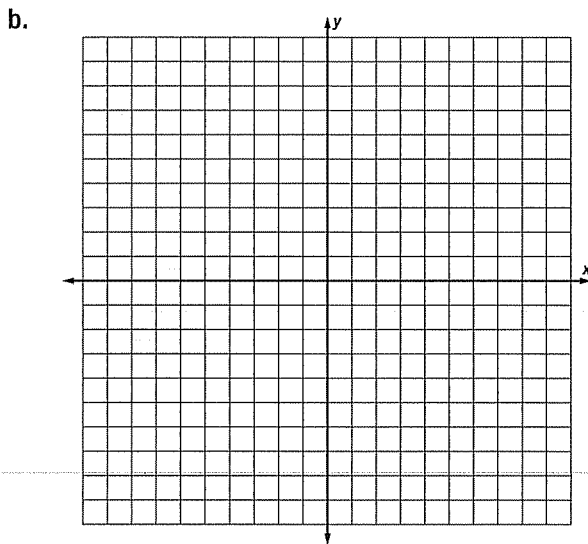
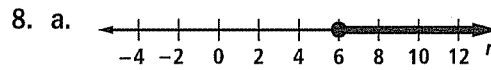
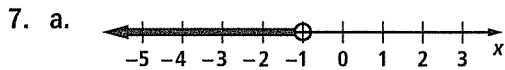
3. $x = 47 - \sqrt{5}, y = 4,700\%$

4. $x = \frac{33}{53}, y = .00294$

5. $x = \sqrt{4} + \sqrt{9}, y = 2.5$

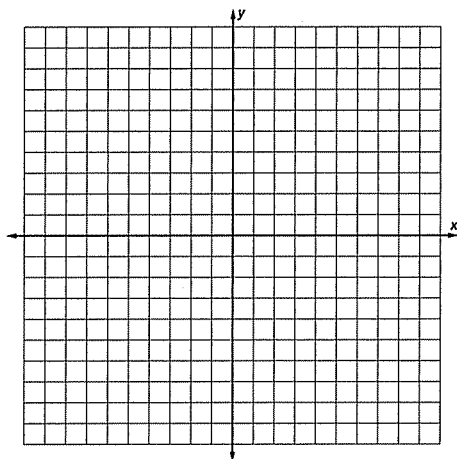
6. $x = 3.45678 \times 2.1, y = 7.25$

In 7 and 8, a. tell what inequality describes each number-line graph, and b. graph the inequality on the coordinate plane.

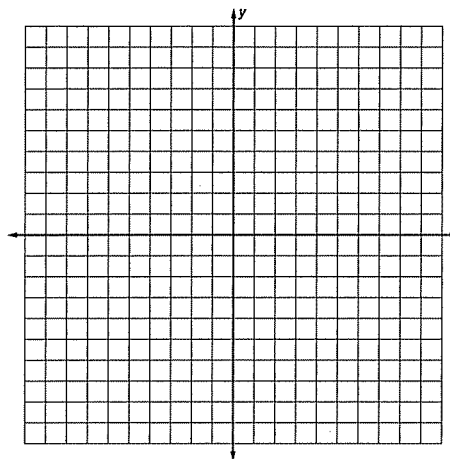


In 9–12, graph the inequality.

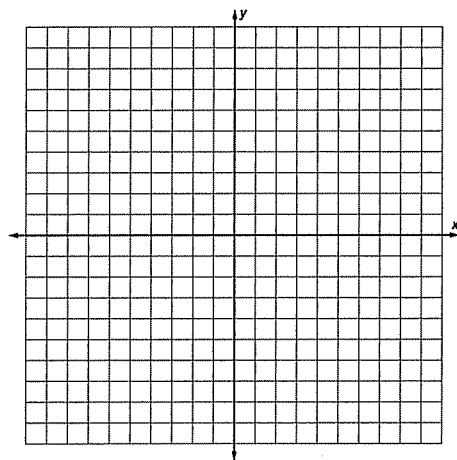
9. $y \leq 2x$



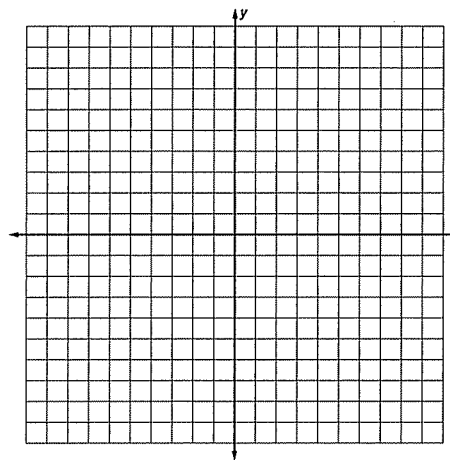
10. $y > x$



11. $y < -\frac{1}{2}x$



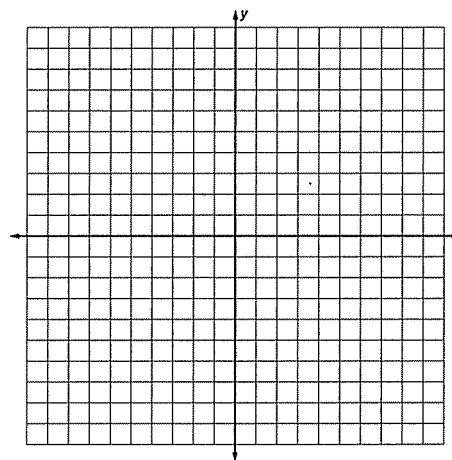
12. $2x + y > 5$



13. If a , b , and c are the lengths of sides of a triangle, then $a + b > c$. Suppose that a , b , and c are *integer* lengths of sides of a triangle, and the longest side $c = 5$. Then $a < 5$, $b < 5$, and $a + b > 5$. Graph all possible pairs of integers a and b that satisfy all three inequalities.

14. a. Find a solution (x, y) to the inequality $y \leq 4x + 2$ that is not a solution to the inequality $y < 4x + 2$.

b. Find a solution (x, y) to the inequality $y < 4x + 2$ that is not a solution to the inequality $y \leq 4x + 2$.



10-4A Lesson Master

Questions on SPUR Objectives
See pages 669–671 for objectives.

SKILLS Objective B

In 1–6, solve the inequality. Show your work.

1. $6a + 4 < 8a$

2. $2b \geq 4b + 8$

3. $-6c + 200 > 2c - 300$

4. $4.3 - 1.4d \leq 5.8d + 8.3$

5. $-\frac{e}{4} + 6 \geq \frac{3e}{8} - 4$

6. $\frac{f}{3} + 7 > 3(3 - 2f)$

7. Amy solved $3x + 2 < 5x - 7$ and got $\frac{9}{2} < x$.

- a. Pick a number that satisfies her solution. _____
Show it works in the original inequality.

- b. Pick a number that does not satisfy her solution. _____
Show it does not work in the original inequality.

USES Objective C

In 8 and 9, write an inequality for the situation. Then answer the question.

8. Hanna has been taking violin lessons for 6 months. She was practicing 30 minutes a day, but her teacher has suggested she increase her practice time by 5 minutes more than the previous day, every day, for a week. Harry just started taking violin. He practiced 10 minutes the first day and increased his practice time by 10 minutes a day, every day, for a week. When will Harry be practicing longer than Hanna?

_____ inequality

_____ answer

9. Ursula is considering two cell-phone options. Option A costs \$49.99 with a package charging 2 cents per minute usage fee. Option B costs \$59.99 with a 1 cent per minute fee. How many minutes must she talk for Option B to be a better buy?

_____ inequality

_____ answer

10-4B Lesson Master**SKILLS** Objective B: Solve equations of the form $ax + b < cx + d$.

In 1–12, solve the inequality. Show your work.

1. $4a + 4 < 12a$

2. $2b \geq -2b + 8$

3. $-4c + 100 > c - 300$

4. $7x - 3 \leq 6 - 2x$

5. $t + 34 > 19 - 4t$

6. $7.3c - 103.6 < 3(12.3c)$

7. $6.3 - 1.5d \leq 4.9d + 4.7$

8. $93.2a - 89.4 + 13.5a < 40.9 - 23.6a$

9. $\frac{e}{8} - 10 \leq \frac{-2e}{6} - 8$

10. $r - \frac{1}{3} \leq \frac{1}{6}r - \frac{2}{5}$

11. $\frac{f}{2} + 5 > -4\left(\frac{f}{8} + 3\right)$

12. $2\left(g - \frac{3}{8}\right) < 5\left(2g + \frac{1}{2}\right)$

13. Here is Bob's solution of the inequality $-4x - 3 < -2x - 7$.
Explain each step. $-4x - 3 < -2x - 7$

$$-4x - 3 + 2x < -2x - 7 + 2x$$

$$-2x - 3 < -7$$

$$-2x - 3 + 3 < -7 + 3$$

$$-2x < -4$$

$$x < 2$$

- a. Pick a number less than 2 and check the result to show that Bob's solution is incorrect. _____

- b. What mistake did Bob make? _____

- c. Find the correct solution. _____

USES

Objective C: Translate situations of constant increase or decrease that lead to sentences of the form $ax + b = cx + d$ or $ax + b < cx + d$.

In 14–16, write an inequality for the situation. Then answer the question.

14. Jean is practicing shooting baskets. She was practicing 20 minutes a day, but decided to increase her practice time by 2 minutes more than the previous day, every day, for a week. Hank practiced shooting baskets for 5 minutes the first day and then increased his practice time by 10 minutes a day, every day, for a week. When will Hank be practicing longer than Jean?

_____ inequality

_____ answer

15. Jerry is considering two cell-phone options. Option A costs \$29.99 with a package charging 3 cents per minute usage fee. Option B costs \$39.99 with a 1 cent per minute fee. How many minutes must he talk for Option B to be a better buy?

_____ inequality

_____ answer

16. Joe's black snake is 2 feet, 10 inches long and is growing $1\frac{1}{4}$ inch per month. Jack's black snake is 1 foot, 3 inches long and is growing $1\frac{1}{2}$ inches a month. Assuming that each will continue to grow at the same rate, how long will it take for Jack's snake to be longer than Joe's?

_____ inequality

_____ answer

10-5A Lesson Master**Questions on SPUR Objectives**
See pages 669–671 for objectives.**USES** Objective D

1. Cashews cost \$6.99 a pound and pecans are \$7.49 a pound. Joe has \$20.
 - a. Write an inequality expressing how many pounds of cashews, c , and pecans, p , he can buy. _____
 - b. If he bought $\frac{3}{4}$ lb of cashews, how many pounds of pecans can he buy? _____
2. Carly has a jar with nickels and dimes in it. When she takes the jar to the bank and has the coins counted, she learns she has \$15.25.
 - a. Write an equation expressing how many nickels, n , and dimes, d , she has. _____
 - b. If she has 83 dimes, how many nickels were in the jar? _____
3. During a sale, CDs cost \$12.99 and DVDs are \$15.49. Kareem has \$100 to spend.
 - a. Write an inequality expressing how many CDs, C , and DVDs, D , he can buy. _____
 - b. If he buys 3 DVDs, how many CDs can he buy? _____
4. In a garden, a dozen tulips take up $1\frac{1}{2}$ square feet, and a dozen crocuses take up $\frac{1}{4}$ square foot. Talia has a spot 3 feet by 4 feet where she is going to plant tulips and crocuses.
 - a. Write an equation expressing the number of dozens of tulips, t , and dozens of crocuses, c , she can plant. _____
 - b. If she plants 6 dozen tulips, how many crocuses will she need to fill her garden? _____
5. In football, a team scores 6 points for a touchdown, T ; 3 points for a field goal, F ; 2 points for a safety, S ; 2 points for a running or passing play following a touchdown, P ; and 1 point for a kicked extra point following a touchdown, E . The Lincoln Tigers won Friday night's game 42 to 17.
 - a. Write an equation that represents how the Tigers scored these points. _____
 - b. Find three different ways they could have reached their score.

10-5B Lesson Master

USES Objective D: Translate situations of linear combinations that lead to sentences of the form $Ax + By = C$ and $Ax + By < C$.

1. Lilies cost \$2.99 a stem, and Japanese iris cost \$2.25 a stem. Jane has saved \$18.00 to buy flowers for Mothers' Day.
 - a. Write an inequality expressing how many stems of lilies, L , and Japanese iris, J , Jane can buy. _____
 - b. If Jane buys 3 lily stems, how many Japanese iris stems can she buy? _____
2. Amir spent less than \$14.50 buying music on-line. Some tunes cost \$0.99; others cost \$1.25.
 - a. Write an inequality expressing how many tunes for \$0.99, n , and how many tunes for \$1.25, d , Amir bought. _____
 - b. If Amir bought 4 tunes that cost \$1.25, what is the largest number of \$0.99 tunes could he have bought? _____
3. Kirsten has a box with nickels and quarters in it. When she counts her money, she finds she has \$14.75.
 - a. Write an equation expressing how many nickels, n , and quarters, q , she could have. _____
 - b. If she has 17 quarters, how many nickels were in the box? _____
4. During a sale, pants cost \$32.99 and shirts cost \$15.49. Jorge has saved \$150 to spend on pants and shirts.
 - a. Write an inequality expressing how many pairs of pants, P , and how many shirts, S , Jorge can buy. _____
 - b. If he buys 3 pairs of pants, how many shirts can he buy? _____
5. Connie has \$15 to take some children and adults to a local museum. Adult's tickets cost \$3 and children's tickets cost \$2.
 - a. Write an inequality expressing how many adults, a , and children, c , she can take. (Connie does not need a ticket.) _____
 - b. If at least one adult ticket must be purchased and Connie wants to use as much of the money as possible, find all the possible combinations (a, c) of numbers of adult's and children's tickets Connie could buy. _____
6. Pat's dad spent \$51.25 buying hot dogs and sodas at the ball game. Hot dogs cost \$5.35 and sodas cost \$3.50.
 - a. Write an equation expressing how many hot dogs, d , and sodas, s , Pat's dad can buy. _____
 - b. Pat's dad bought 7 sodas. How many hot dogs did he buy? _____

7. A dozen emus take up $1\frac{1}{2}$ square miles of pasture, and a dozen llamas take up $3\frac{1}{4}$ square miles of pasture. On a ranch there are 20 square miles of pasture.
- Write an inequality expressing the number of dozens of emus, e , and dozens of llamas, m , that can be pastured on the ranch. _____
 - If there are 3 dozen emus, at most how many dozen llamas could be pastured? _____
8. Use a grading system in which As are worth 4 points, Bs are worth 3 points, Cs are worth 2 points, Ds are worth 1 point, and Fs are worth 0 points.
- What is the equation for determining a GPA with a As, b Bs, c Cs, d Ds, and f Fs? _____
 - If Jon has a GPA of 2.1 with 1 A, 2 Bs, 1 D, and 1 F, how many Cs did he have? _____
9. In basketball, a team scores 3 points for a basket from outside the 3-point arc, T ; 2 points for a field goal from inside the arc, F ; and 1 point for a penalty free throw, P . The Overland Lions won Saturday night's game 32 to 17.
- Write an equation that represents how the Lions scored these points. _____
 - Find three different ways the Lions could have reached their score. _____
-
10. Veca spent \$24.25 on blouses and skirts at a rummage sale. Blouses cost \$2.75 each and skirts cost \$3.50.
- Write an equation representing the number of blouses, b , the number of skirts, s , and the total amount Veca spent. _____
 - If she bought 3 skirts, how many blouses did she buy? _____
11. Jim's class sold greeting cards and wrapping paper to earn money for a field trip. Greeting cards give a profit of \$5.25 per box, and wrapping paper gives a profit of \$3.95 per package. The class needs to earn \$350 for their field trip.
- Write an inequality expressing how many boxes of cards, b , and packages of wrapping paper, p , they need to sell. _____
 - If they sell 27 boxes of cards, how many packages of wrapping paper must they sell to meet their goal? _____
12. Mike spent \$9.95 (before tax) on pens and mechanical pencils. The pens cost \$0.79 each and the mechanical pencils cost \$1.20 each.
- Write an equation representing the number of pens, p , mechanical pencils, m , and the amount Mike spent on them. _____

10-6A Lesson Master

Questions on SPUR Objectives
See pages 669–671 for objectives.

REPRESENTATIONS Objective F

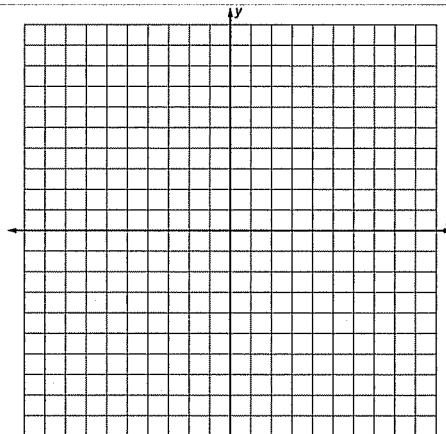
In 1 and 2, use a graphing calculator.

1. Consider the equation $2x + 3y = 6$.

a. Solve the equation for y .

b. Graph using a graphing calculator and sketch the graph on the axes at the right.

c. Name three points on the line.

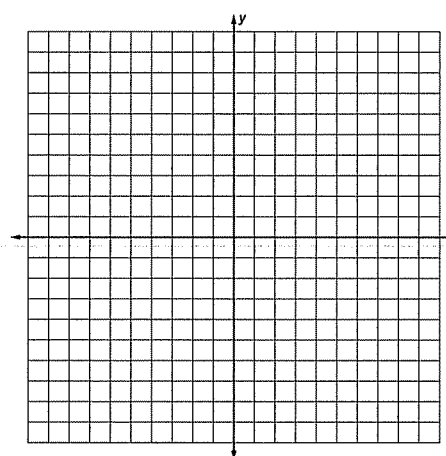


2. Consider the inequality $x - 4y < 12$.

a. Solve the inequality for y .

b. Graph using a graphing calculator and sketch the graph on the axes at the right.

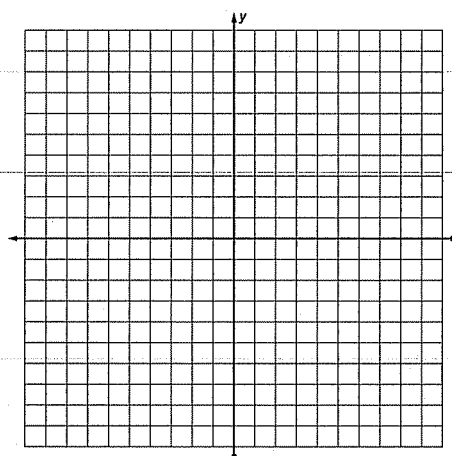
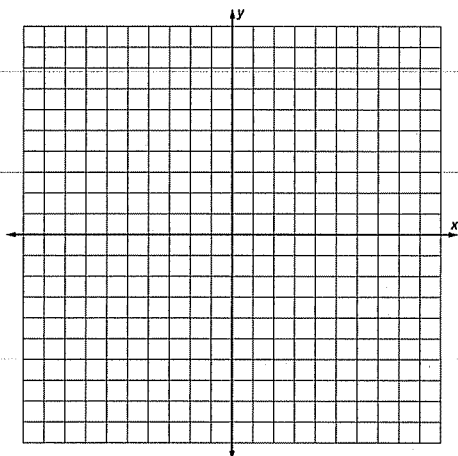
c. Name three points on the graph.



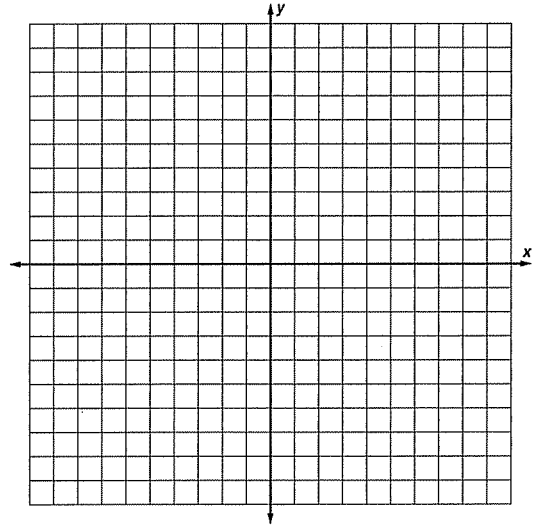
In 3 and 4, sketch the graph using any method. Label the coordinates of three points on each graph.

3. $8 = \frac{1}{2}x + \frac{2}{3}y$

4. $1.2x - 3.6y < 9$



5. Graph all pairs of numbers that meet these conditions: $x > -1$, $y > 3$, $x + y < 8$.

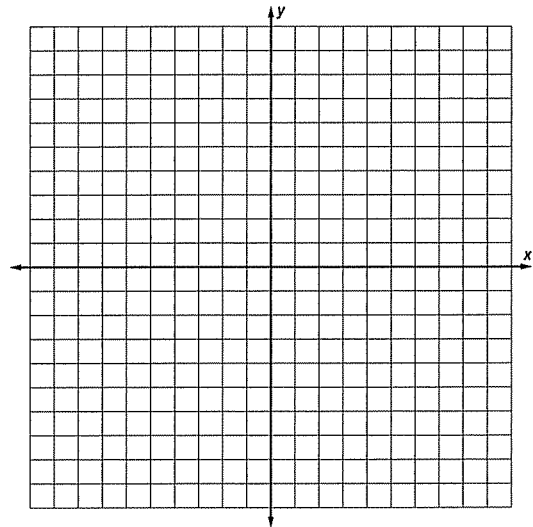


6. Brad took a quiz with 8 questions. He has finished x questions and has y more to go.

a. Write an equation that relates x and y .

b. Graph your equation from Part a.

c. What points on the graph make sense in this situation?

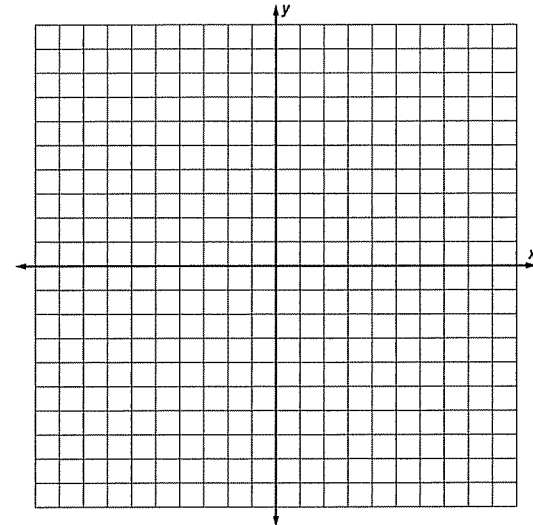


7. Toni tosses a beanbag at a target on the floor during a class party. If over 50% of the beanbag lands in the inner circle, the player gets 10 points. If over 50% of the beanbag lands in the outer circle, the player gets 5 points. No points are given for tosses that land outside of the outer circle. Toni gets a score of 80 after 10 tosses.

a. Write an equation that relates the number of points Toni earned and her tosses that landed in the inner circle (x) and her tosses that landed in the outer circle (y).

b. Graph your equation from Part a.

c. What points on the graph make sense in this situation?



10-6B Lesson Master**REPRESENTATIONS**Objective F: Graph sentences of the form
 $ax + by = c$ and $ax + by < c$.

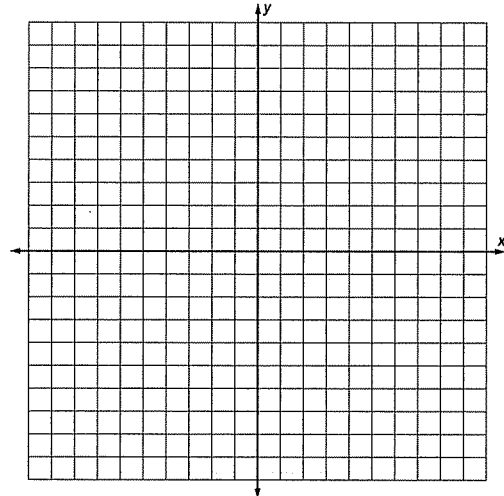
In 1–3, use a graphing utility.

1. Consider the equation $x + 3y = 6$.

a. Solve the equation for y .

b. Graph using a graphing calculator and sketch the graph on the axes at the right.

c. Name three points on the line.

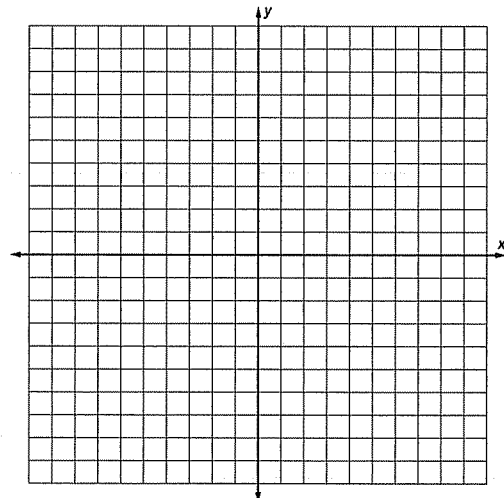


2. Consider the inequality $2x - y > 8$.

a. Solve the inequality for y .

b. Graph using a graphing calculator and sketch the graph on the axes at the right.

c. Name three points on the graph.

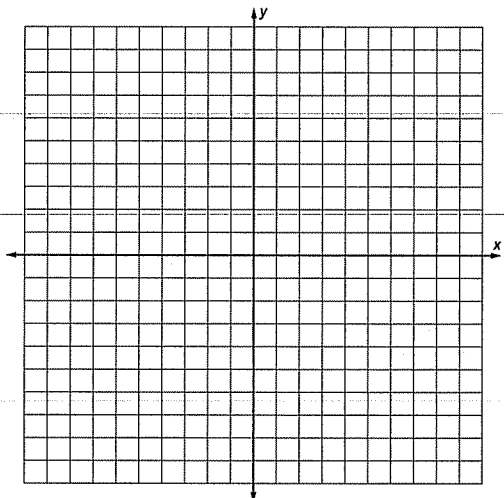


3. Consider the equation $2x - 3y = 6$.

a. Solve the equation for y .

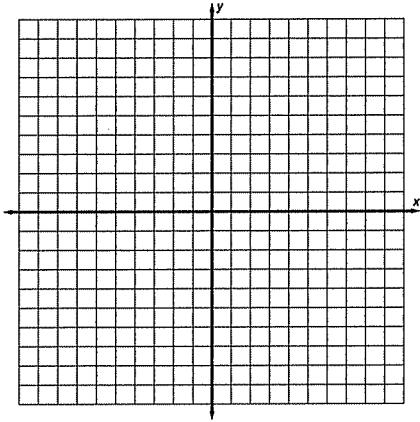
b. Graph using a graphing calculator and sketch the graph on the axes at the right.

c. Name three points on the line.

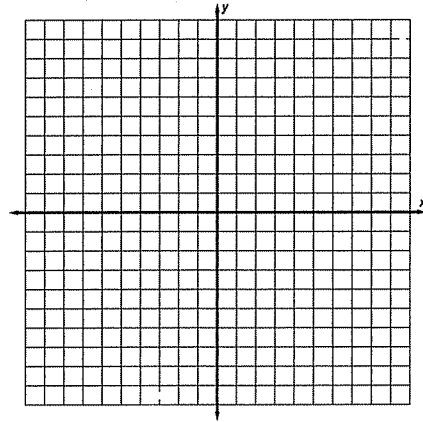


On 4 and 5, sketch the graph using any method. Label the coordinates of three points on each graph.

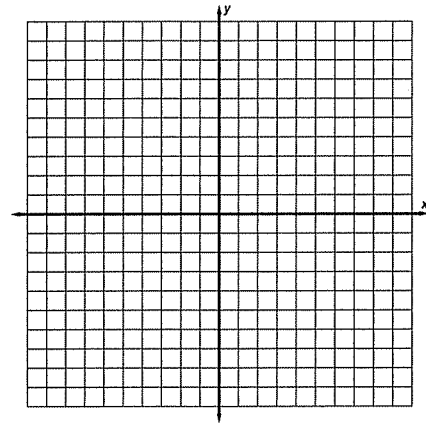
4. $6 = \frac{1}{3}x + \frac{1}{2}y$



5. $2.4x - 1.6y < 8$



6. Graph all pairs of numbers that meet these conditions: $x < 2$, $y < 3$, $x + y > -2$.

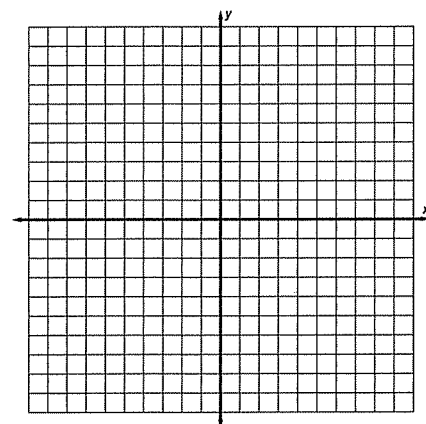


7. Jerry is setting 6 fence posts. He has finished x posts and has y more to go.

a. Write an equation that relates x and y .

b. Graph your equation from Part a.

c. What points on the graph make sense in this situation?



10-7A Lesson Master

Questions on SPUR Objectives
See pages 669–671 for objectives.

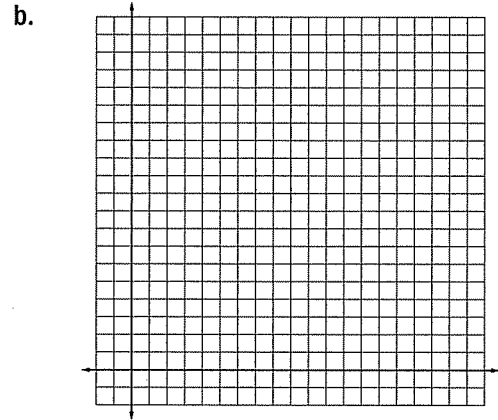
REPRESENTATIONS Objective G

In 1–3, a situation is given. a. Determine bounds for the dimensions of a graph of the situation. b. Draw a time-distance graph for each situation.

1. Robby's school is $1\frac{1}{2}$ miles from his home.

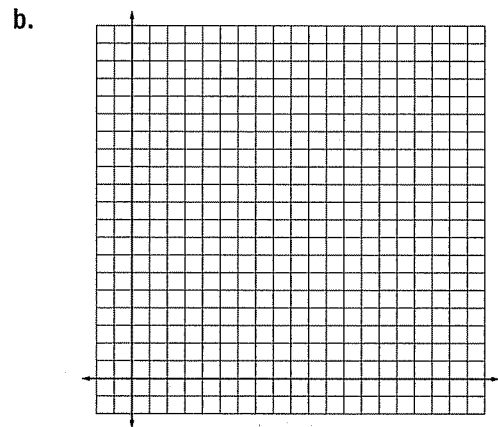
At the end of the school day, he went to a friend's house, which is another $\frac{1}{2}$ mile farther from where Robby lives. He walked there in ten minutes. After an hour of doing homework with his friend, Robby started walking home. After he had gone $\frac{2}{3}$ of a mile in 10 minutes, his mother drove by and stopped to pick him up. They got home in 5 minutes.

a. _____



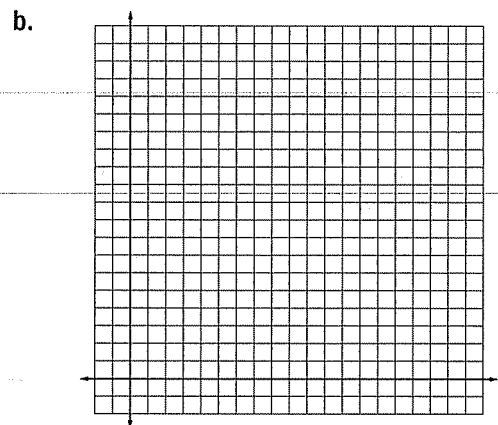
2. Becky is training for the cross-country season. Today she ran a total of 5 miles from and to school. She warmed up by running her first mile in 8 minutes. Then she sprinted a half mile for 3 minutes. She ran the next three miles in 21 minutes, turning around at the halfway (2.5 mile) point in her run. Then she went ran a bit faster and finished the last half mile in 3 minutes, so that the entire run took her only 35 minutes.

a. _____

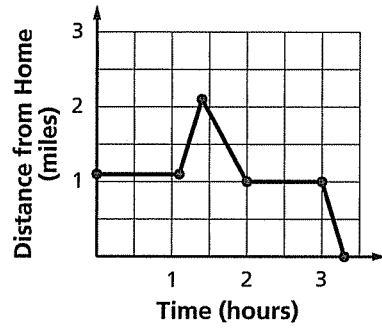


3. Represent the distance from the train station in Paris. In France, the Train à Grande Vitesse (high speed train) cruises at about 168 mph. It takes a total of around 2 hours to make the approximately 280-mile trip from Paris to Lyon. It can only go 50 mph for the first 20 miles while it is Paris, then goes at cruising speed for $1\frac{1}{2}$ hours before slowing to 48 mph for the last few miles into Lyon.

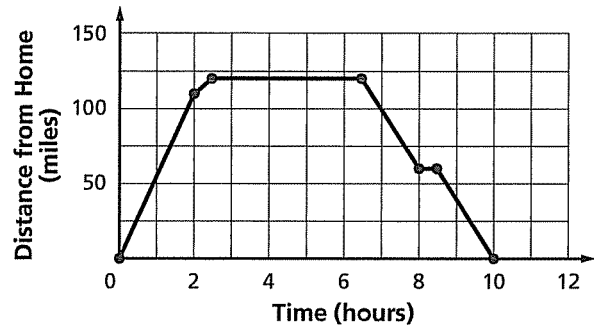
a. _____



4. Make up a time-distance story that could lead to this graph.



5. Make up a time-distance story that could lead to this graph.



10-7B Lesson Master

REPRESENTATIONS Objective G: Graph situations involving time and distance.

- On a graph with distance represented on the y -axis and time represented on the x -axis, what does a horizontal segment signify?

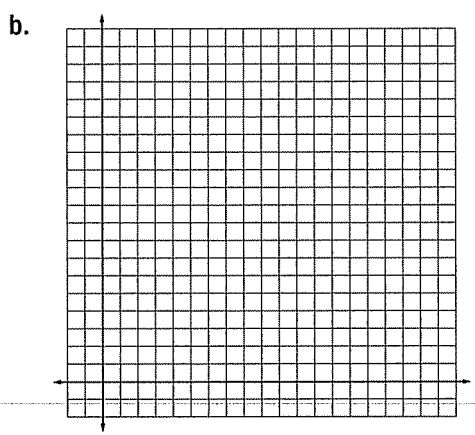
- On a graph with distance represented on the y -axis and time represented on the x -axis, what does it mean if the slope between 3 points changes from 4 to 2?

- On a graph with distance represented on the y -axis and time represented on the x -axis, what does it mean if the slope between 3 points changes from 3 to -3 ?

In 4 and 5, a situation is given. a. Determine bounds for the dimensions of a graph of the situation. b. Draw a time-distance graph for each situation.

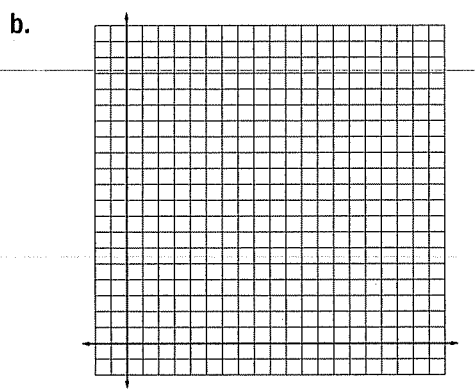
4. Kendra left home and walked half a mile to a friend's house in 10 minutes. They walked a half-mile further towards the park in 15 minutes. They spent an hour enjoying the park, and then walked on another mile from Kendra's home to a store, in 30 minutes. After shopping for 20 minutes, Kendra rode back home with another friend in 10 minutes.

a. _____

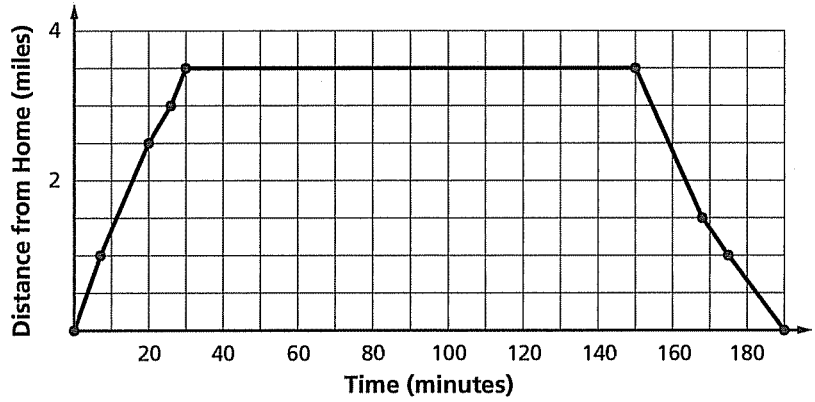


5. An elevator's primary floor is the first floor. One day a repair person got on at the ground floor (1 floor below the first floor), rode to the 26th floor in 2 minutes, then to the 4th floor in 1 minute, stayed there for 7 minutes, and then rode back to the ground floor in 0.5 minute.

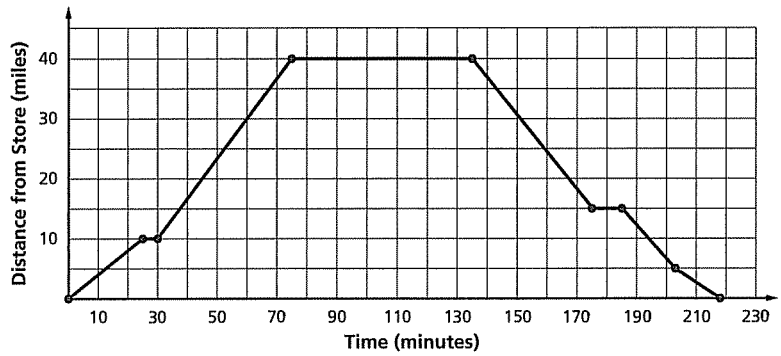
a. _____



6. Make up a time-distance story that could lead to this graph.



7. Make up a time-distance story that could lead to this graph.



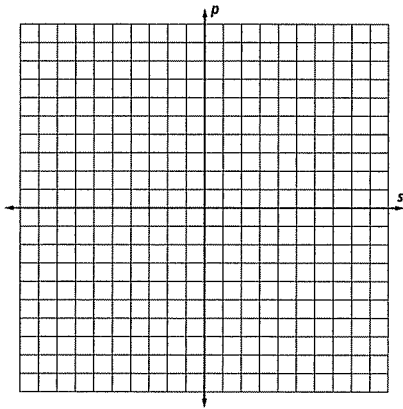
10-8A Lesson Master

Questions on SPUR Objectives
See pages 669–671 for objectives.

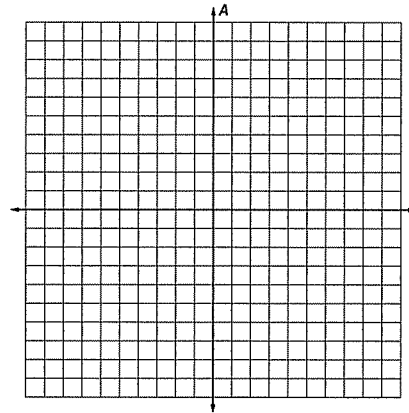
REPRESENTATIONS Objective H

In 1–4, plot several points that satisfy the formula, and then sketch the graph.

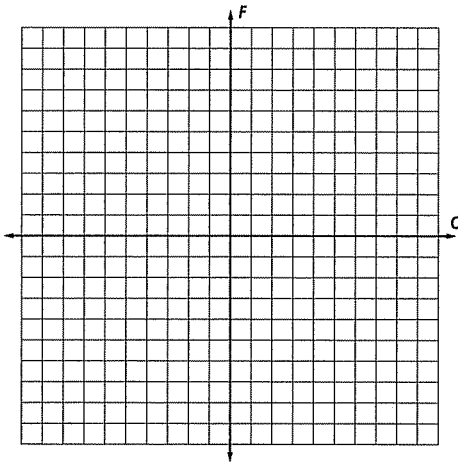
1. Perimeter of a regular hexagon with sides of length s : $p = 6s$



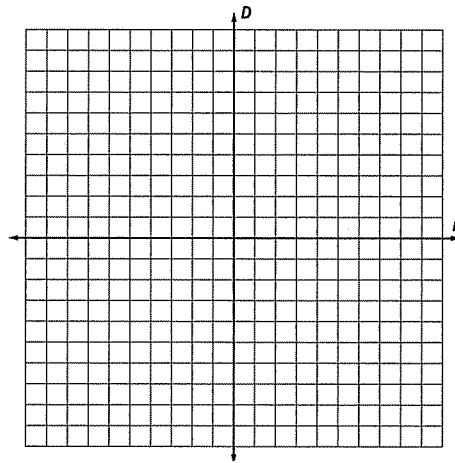
2. Area of a circle with radius r : $A = \pi r^2$



3. Fahrenheit temperature corresponding to given Celsius temperature: $F = 1.8C + 32$



4. The number of degrees in an exterior angle of a regular n -sided polygon: $D = \frac{360}{n}$



5. Which of the above graphs are not lines? Could you tell before graphing that a graph would not be a line? If so, how?

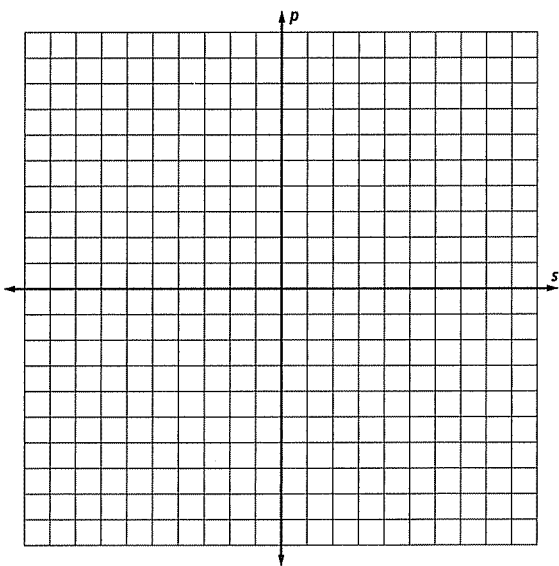
6. Which graphs above have points in quadrants II, III, or IV that make sense? Why?

10-8B Lesson Master**REPRESENTATIONS**

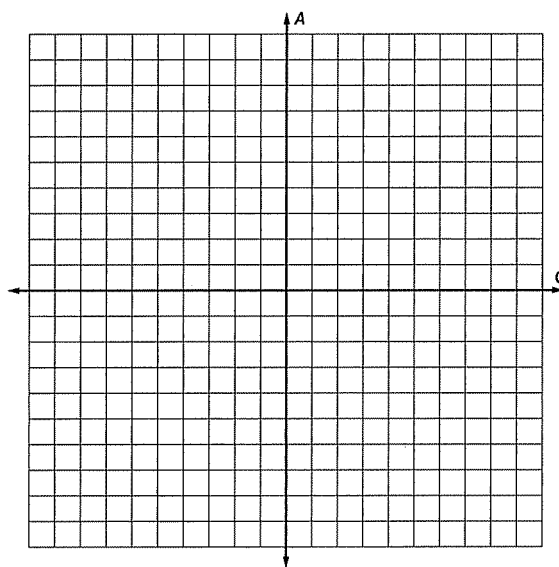
Objective H: Graph a formula.

In 1-6, plot several points that satisfy the formula, and then sketch the graph.

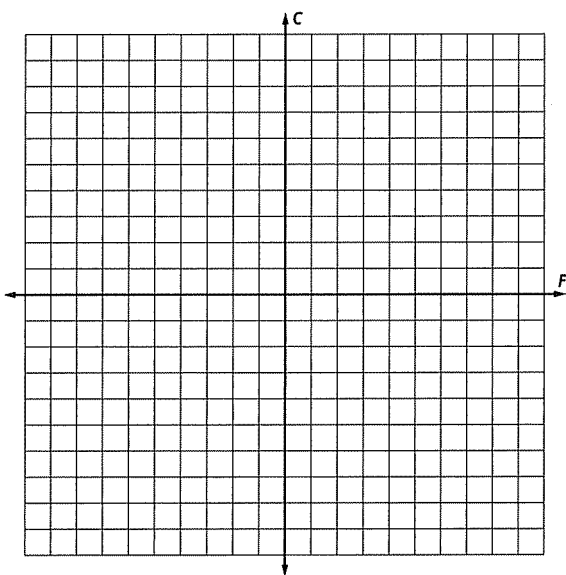
1. Perimeter of a regular octagon with sides of length s : $p = 8s$



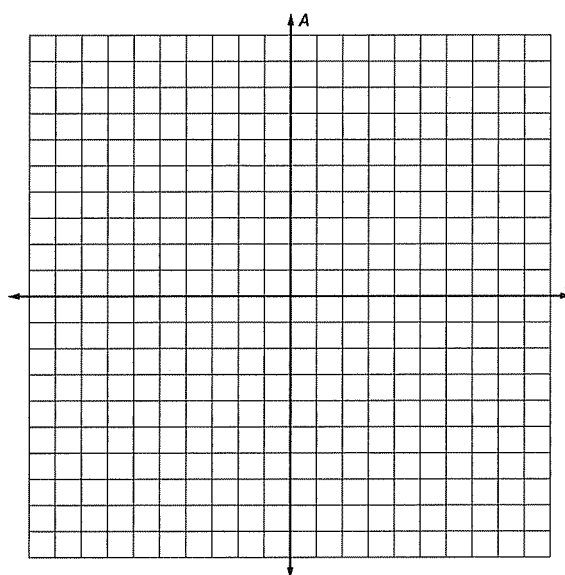
2. The area of a circle given its circumference C : $A = \frac{C^2}{4\pi}$



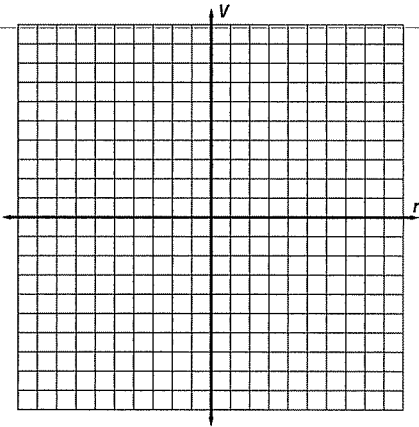
3. Celsius temperature corresponding to given Fahrenheit temperature: $C = \frac{5}{9}(F - 32)$



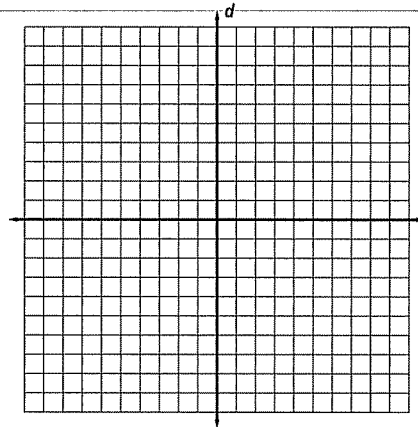
4. Area of equilateral triangle with sides of length s : $A = s^2 \frac{\sqrt{3}}{4}$ Use $\sqrt{3} = 1.732$



5. Volume of a sphere with radius r : $V = \frac{4}{3} \pi r^3$



6. Distance in feet that a falling object travels after falling for t seconds (ignoring air friction): $d = 16t^2$



7. Examine the graphs in Questions 1–6.

a. Which of the graphs are not lines?

b. Could you tell before graphing that a graph would not be a line? If so, how?

8. Which of the graphs in Questions 1–6 have points in Quadrants II, III, or IV that make sense? Why?

REVIEW Lesson 6–8, Objective H

9. How many right angles can a triangle contain? Why?

10. *True or false.* The sum of the measures of the angles in a quadrilateral is 360° . Justify your answer.
