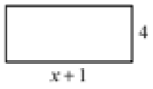
Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Pre-Algebra Mastery Test #8 Review

Find the value of x for the figure.

1 Perimeter $= 26$



Solve the equation. Check your solution.

2 $-\frac{1}{3}y + 45 = 51$

3 The smaller box is 2 feet tall and casts a shadow of 10 feet. The larger box is 6 feet tall. (The figures may not be drawn to scale.)

How long of a shadow does the larger box cast?

4 A jar contains 10 blue marbles, 4 red marbles, and 8 white marbles. What are the odds of drawing a blue marble from the bag?

5 A teacher bought museum tickets for 20 students. The total cost of the tickets was $80. What was the cost per student?

Write the fraction as a percent.

6 $\frac{3}{5}$

7 Darcy correctly answered 45 questions on a social studies test. She received a score of 90%. How many questions were on the test?

8 During the soccer season, David scored goals on 11% of the shots he took. If he scored 22 goals, how many shots did he take?

9 What is a salesperson's commission on a $600 sale if the commission rate is 15%?

10 In 1994, the circulation of a local newspaper was 5000. In 1995, its circulation was 2430. Find the percent of change in the newspaper's circulation. Is this a percent of increase or decrease?

11 Theatre Outfitters International is advertising full-size movie screens for 20% off the regular price. If the regular price of a full-size screen is $445, find the amount of the discount.

12 The sales tax rate in a certain state is 8%. Find the total price paid for a pair of shoes that costs $34.

Use the simple interest formula to find the unknown quantity.

13 $I = \$90$
$P =$?
$r = 4\%$
$t = 3$ months

14 $I = \$1800$
$P = \$3200$
$r =$?
$t = 9$ years

Find the simple interest earned on the account.

15 $P = \$500, r = 6.5\%, t = 2$ years

Identify the domain and range of the relation.

16

x	−5	2	−6	−1	4
y	4	2	−2	−5	0

F. domain: 4, 2, –2, –5, 0
range: 4, 2, –2, –5, 0

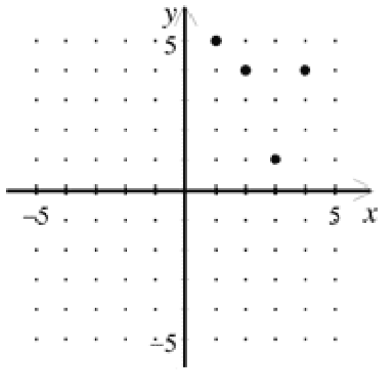
G. domain: 4, 2, –2, –5, 0
range: –5, 2, –6, –1, 4

H. domain: –5, 2, –6, –1, 4
range: 4, 2, –2, –5, 0

I. domain: –5, 2, –6, –1, 4
range: –5, 2, –6, –1, 4

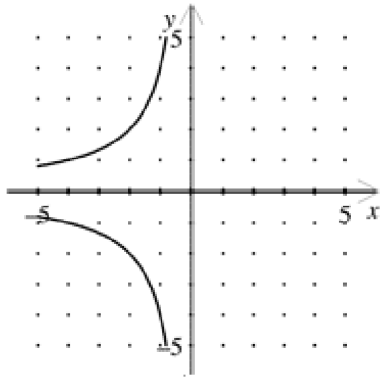
Use the vertical line test to determine if the graph represents y as a function of x.

17



Tell whether the graph represents a function. Write Yes or No.

18



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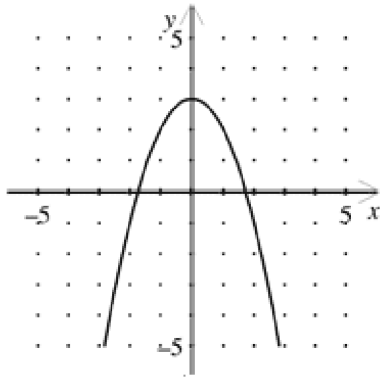
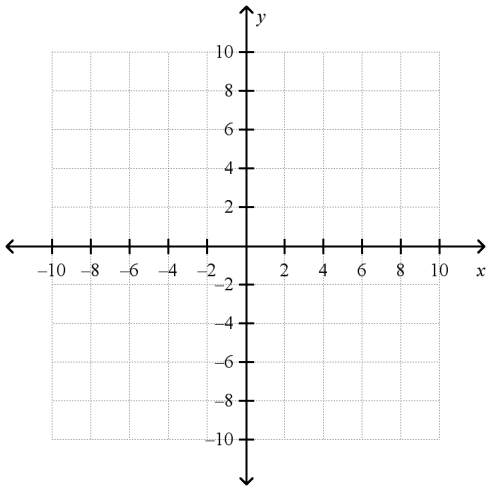


20 Determine if the ordered pair $(2, 3)$ is a solution of $4x - y = 11$.

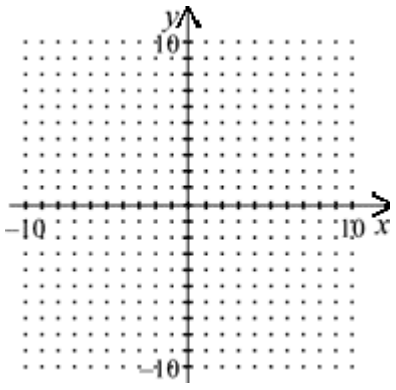
21 Complete the table of values for $-5x + y = -2$. Then graph the equation.

x	-2	-1	0	1	2
y	?	?	?	?	?



Graph the linear equation.

22 $y = \frac{2}{3}x + 1$

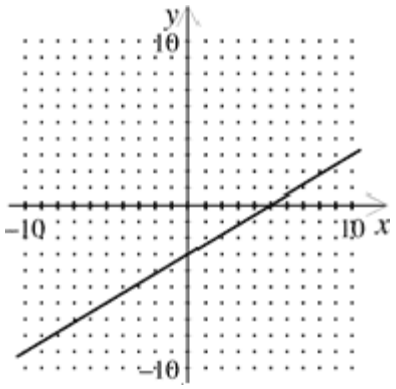


23 Danielson's Deli caters dinner banquets for a fee of $105 plus $9 for each person attending. This can be modeled by the equation $C = 9x + 105$ where C represents the total cost in dollars and x is the number of people attending. Find the cost for 125 people.

A. $1230
B. $1145
C. $1335
D. $1050

Identify the x-intercept and the y-intercept of the line.

24



Find the intercepts of the equation's graph.

25 $y = -3x + 3$

A. x-intercept: 1, y-intercept: 3
B. x-intercept: 3, y-intercept: 1
C. x-intercept: 3, y-intercept: -3
D. x-intercept: -3, y-intercept: 3

26 $-3x + 3y = 8$

Find the slope of the line passing through the points.

27 $(-6, 8), (6, 3)$

A. $-\frac{5}{12}$
B. $-\frac{12}{5}$
C. $-\frac{14}{3}$
D. $-\frac{3}{14}$

28 $(-2, -2), (-7, -8)$

29 $(-3, 1), (1, 1)$

Find the slope and y-intercept of the line with the given equation.

30 $y = -\frac{5}{3}x + 7$

31 $8x + 4y = -96$

A. slope: 24; y-intercept: $\frac{1}{2}$
B. slope: 16; y-intercept: $-\frac{1}{2}$
C. slope: -2; y-intercept: -24
D. slope: 2; y-intercept: 24

32 Which is the slope of a line parallel to the line $3x + 4y = 5$?

F. $-\frac{4}{3}$
G. $\frac{3}{4}$
H. $\frac{4}{3}$
I. $-\frac{3}{4}$

33 What is the slope of a line perpendicular to the line $2x + 2y = 8$?

Choose the equation of the line with the given slope and y-intercept.

34 slope $= -\frac{3}{8}$; y-intercept $= 3$

F. $y = -\frac{3}{8}x - 3$
G. $y = \frac{3}{8}x - 3$
H. $y = -\frac{3}{8}x + 3$
I. $x = -\frac{3}{8}y + 3$

Write an equation of the line with the given slope and y-intercept. Express your answer in slope-intercept form.

35 slope $= -2$; y-intercept $= -4$

Write an equation of the line through the given points. Express your answer in slope-intercept form.

36 $(-3, -2), (0, -6)$

Write an equation of the line that is parallel to the given line and passes through the given point. Express your answer in slope-intercept form.

37 $y = -2x + 6; (0, -2)$

Choose the equation of the line that is parallel to the given line and passes through the given point.

38 $y = 6x - 4; (0, -5)$

F. $y = 6x - 5$
G. $y = -\frac{1}{6}x - 5$
H. $y = -6x + 5$
I. $y = 6x + 30$

Choose the equation of the line that is perpendicular to the given line and passes through the given point.

39 $y = \frac{2}{3}x + \frac{4}{5}; \left(0, -\frac{9}{2}\right)$

A. $y = \frac{2}{3}x + \frac{32}{3}$
B. $y = -\frac{3}{2}x + \frac{9}{2}$
C. $y = -\frac{3}{2}x - \frac{9}{2}$
D. $y = \frac{2}{3}x - \frac{32}{3}$

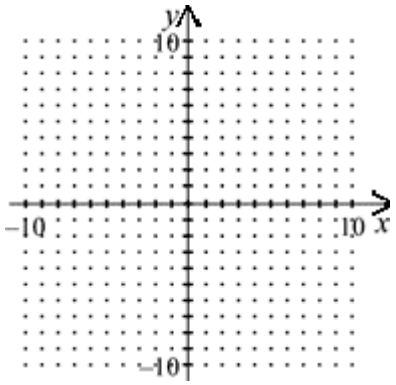
40 Let $f(x) = -4x + 4$. Find $f(-2)$.

F. -12
G. 12
H. 4
I. 8

41 Let $h(x) = -4x + 16$. Find x when $h(x) = 48$.

Graph the function.

42 $f(x) = \frac{3}{4}x + 1$



43 Write a linear function g given that $g(0) = 5$ and $g(10) = 9$.

A. $g(x) = \frac{5}{2}x - 5$

B. $g(x) = \frac{5}{2}x + 5$

C. $g(x) = \frac{2}{5}x - 5$

D. $g(x) = \frac{2}{5}x + 5$

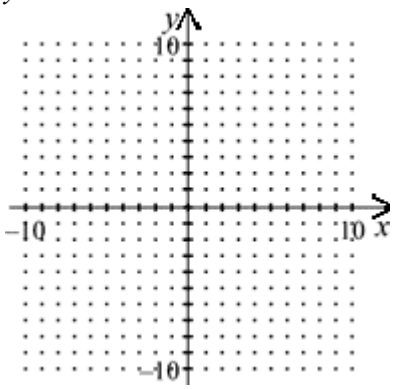
44 Does the ordered pair $(5, 6)$ satisfy the system of linear equations?

$4x + 4y = 40$

$x - 4y = -15$

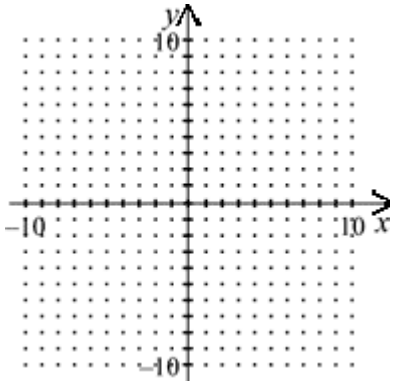
Graph the system of equations. Determine whether the system has *no solution*, *one solution*, or *infinitely many solutions*.

45 $y = 5x - 4$
$y = 5x + 1$



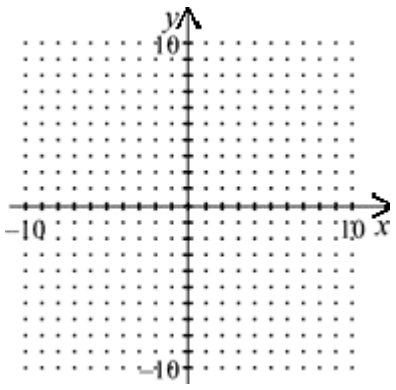
Solve the linear system by graphing.

46 $x + y = 5$
$3x - y = 7$



47 $x - 2y = 5$

$6y = 3x - 15$



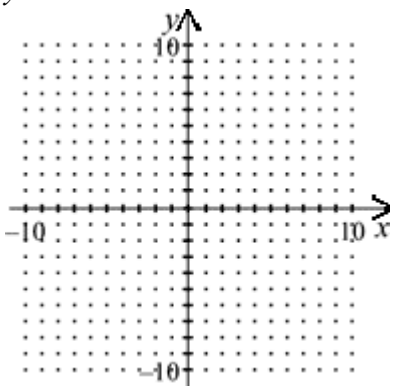
Tell whether the ordered pair is a solution of the inequality.

48 $5x - 2y \leq -14; \left(-2, -2\right)$

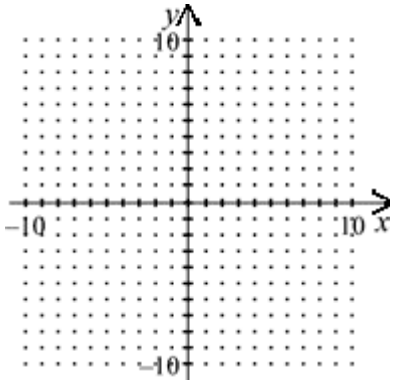
49 $y > 3x - 24; \left(5, -6\right)$

Graph the inequality.

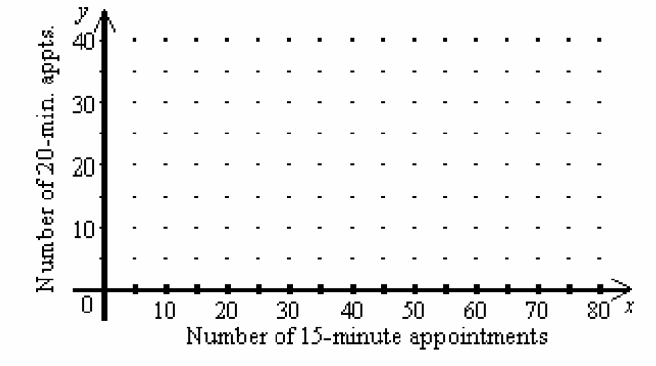
50 $y \leq 1$



51 $y \leq 7x - 7$



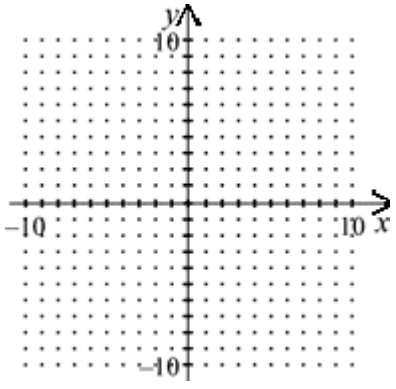
52 A doctor's office schedules 15-minute and 20-minute appointments. The doctor also makes hospital rounds for four hours each weekday. These activities are limited to 30 hours per week. The inequality $15x + 20y \leq 600$ models the situation, where x represents the number of 15-minute appointments and y represents the number of 20-minute appointments. Graph the inequality.

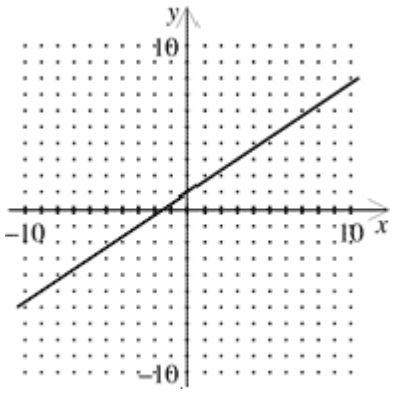


Pre-Algebra Mastery Test #8 Review
Answer Section

1. 8
2. −18
3. 30 ft
4. $\frac{5}{6}$
5. $4 per student
6. 60%
7. 50
8. 200
9. $90
10. 51.4%; decrease
11. $89
12. $36.72
13. $9000
14. 6.25%
15. $65
16. H
17. Function
18. No
19. Yes
20. No
21.

x	−2	−1	0	1	2
y	−12	−7	−2	3	8





22

23 A

24 x-intercept: 5, y-intercept: -3

25 A

26 x-intercept: $-\frac{8}{3}$, y-intercept: $\frac{8}{3}$

27 A

28 $\frac{6}{5}$

29 0

30 slope: $-\frac{5}{3}$; y-intercept: 7

31 C

32 I

33 1

34 H

35 $y = -2x - 4$

36 $y = -\frac{4}{3}x - 6$

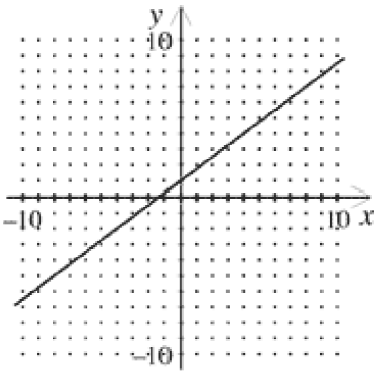
37 $y = -2x - 2$

38 F

39 C

40 G

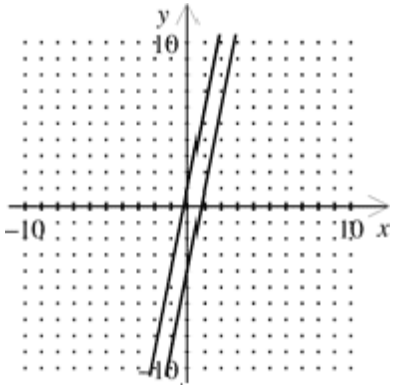
41 −8



42

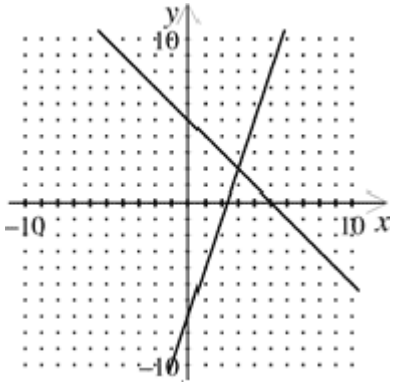
43 D

44 No



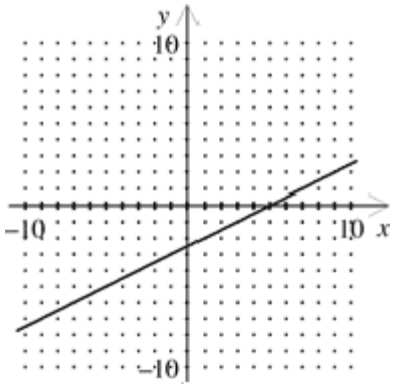
45

no solution



46

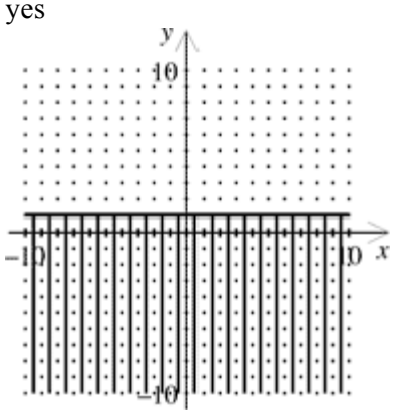
$(3, 2)$

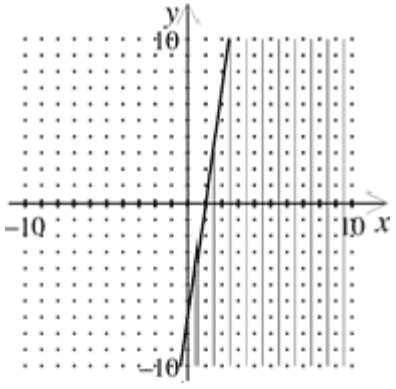
47 

48 infinitely many solutions

49 no

50 yes



51 

52