

Do the following as indicated. Show your work in the bluebook.

Solve the equation.

1) $4(3x + 4) + 28 = 5x + 2$

2) $12(8x - 3) = 6x - 9$

3) $\frac{x + 2}{2} - \frac{7x - 12}{8} = 1$

4) $0.03(3x - 7) = 0.09(x + 7) - 0.84$

5) $|8x + 4| + 5 = 10$

6) $|7x - 1| = |-7 + 5x|$

Solve the formula for the specified variable.

7) $C = \frac{5}{9}(F - 32)$ for F

Solve.

8) Four times the sum of some number and 3 is equal to 6 times the number minus 6.

9) The sum of three consecutive odd integers is 183. Find the integers.

10) Angle A and angle B are supplementary angles and angle A is 40° less than four times angle B. Find the measures of angle A and angle B.

11) The cost C to produce x number of tennis rackets is $C = 100 + 16x$. The tennis rackets are sold wholesale for \$21 each, so revenue R is given by $R = 21x$. Find how many tennis rackets the manufacturer needs to produce and sell to break even.

12) Cindy has scores of 73, 83, 85, and 90 on her biology tests. Use a compound inequality to find the range of scores she can make on her final exam to receive a C in the course. The final exam counts as two tests, and a C is received if the final course average is from 70 to 79.

Write the solution set using interval notation.

13) $\frac{1}{4}(2x + 12) > \frac{3}{8}(x - 1)$

14) $3(3x - 3) + 26 \leq 5x + 1$

Solve the compound inequality. Write the solution set in interval notation.

15) $-8x < -40$ and $x + 8 > 11$

16) $-4x + 1 \geq 9$ or $6x + 3 \geq -21$

Solve the inequality. Write solution in interval notation.

$$17) \left| \frac{7y + 21}{3} \right| < 7$$

$$18) |7k - 5| < -3$$

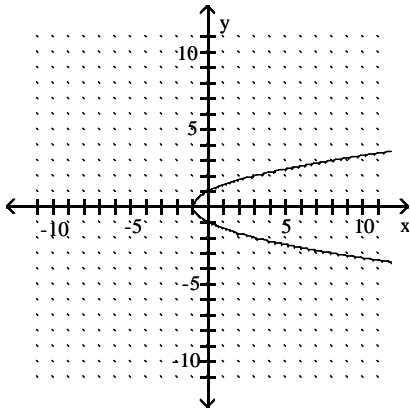
$$19) |8k - 1| \geq 6$$

Find the indicated value.

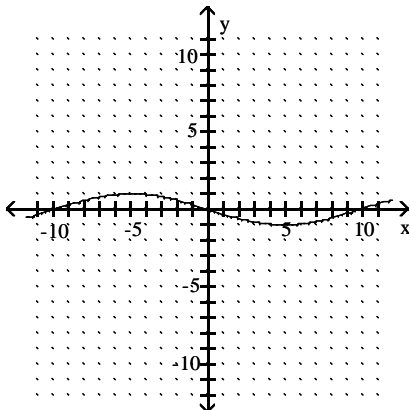
$$20) \text{ Find } f(-3), f(-2), f(5) \text{ when } f(x) = 2x^2 - 5x + 2$$

Find the domain and the range of the relation. Use the vertical line test to determine whether the graph is the graph of a function.

21)



22)



Graph the function.

$$23) f(x) = -\frac{1}{2}x + 5$$

$$24) f(x) = 4$$

Graph the equation.

25) $y = |x| - 2$

26) $x = -4$

Find the slope and the y-intercept of the line.

27) $-5y + 4x = 14$

28) $f(x) = -\frac{1}{4}x - 5$

Determine whether the lines are parallel, perpendicular, or neither.

29) $-5x + 3y = 2$
 $3x + 5y = 15$

30) $-12x + 3y = 6$
 $4x - y = 14$

Write an equation of the line with the given slope and containing the given point. Write the equation in the form $y = mx + b$.

31) Slope $-\frac{7}{9}$; through $(4, 2)$

Find an equation of the line. Write the equation in standard form.

32) Through $(3, 5)$; perpendicular to $3x - 4y = 6$

33) Through $(2, -2)$; parallel to $y = 8$

Find an equation of the line. Write the equation using function notation.

34) Through $(-1, -8)$ and $(3, 16)$

35) Through $(2, 1)$; parallel to $f(x) = 4x - 5$

Graph the inequality.

36) $6x - 3y \geq 18$

37) $-5x + 3y > 15$

Graph the union or intersection, as indicated.

38) The intersection of $x \geq 1$ and $-x + 4y < -12$

39) The union of $x + y \leq 0$ or $4x - 2y \geq 8$

Answer Key

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1) $x = -6$

2) $x = \frac{3}{10}$

3) $x = 4$

4) all real numbers

5) $x = \frac{1}{8}, -\frac{9}{8}$

6) $-3, \frac{2}{3}$

7) $F = \frac{9}{5}C + 32$

8) The number is 9.

9) The odd integers are 59, 61, and 63.

10) $A = 136^\circ, B = 44^\circ$

11) 20 tennis rackets

12) $44.5 \leq \text{final score} \leq 71.5$

13) $(-27, \infty)$

14) $(-\infty, -4]$

15) $(5, \infty)$

16) $(-\infty, \infty)$

17) $(-6, 0)$

18) \emptyset

19) $(-\infty, -\frac{5}{8}] \cup [\frac{7}{8}, \infty)$

20) $f(-3) = 35, f(-2) = 20, f(5) = 27$

21) domain: $[-1, \infty)$

range: $(-\infty, \infty)$

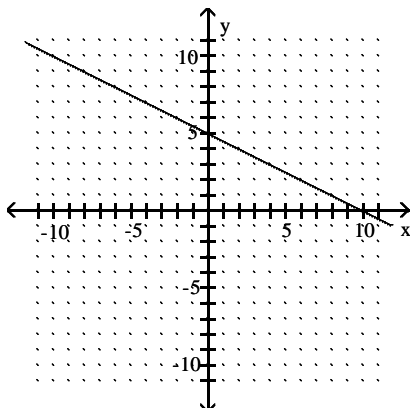
not a function

22) domain: $(-\infty, \infty)$

range: $[-1, 1]$

function

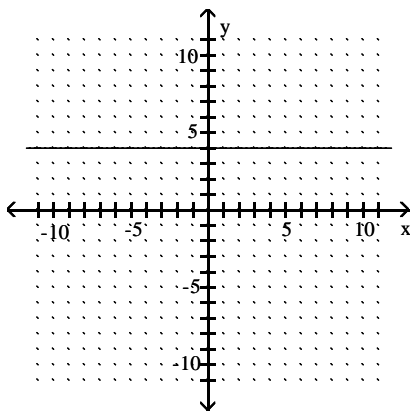
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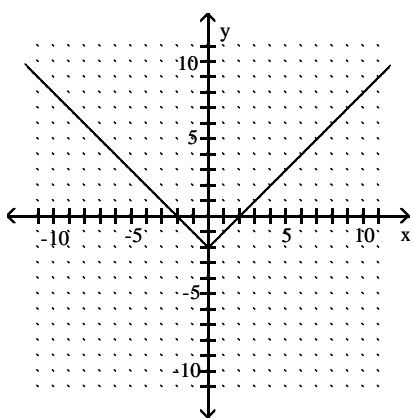
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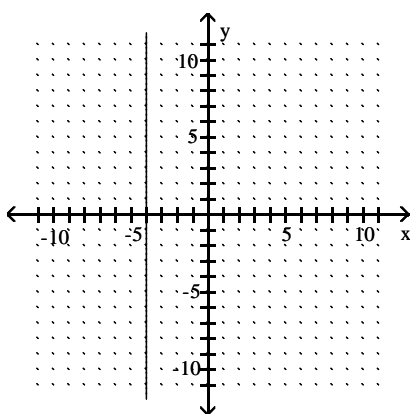
24)



25)



26)



27) $m = \frac{4}{5}; b = -\frac{14}{5}$

28) $m = -\frac{1}{4}; b = -5$

29) perpendicular

30) parallel

31) $y = -\frac{7}{9}x + \frac{46}{9}$

32) $4x + 3y = 27$

33) $y = -2$

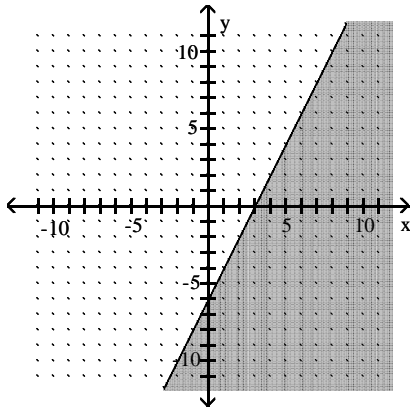
34) $f(x) = 6x - 2$

35) $f(x) = 4x - 7$

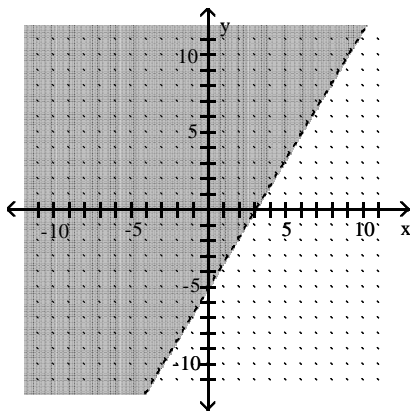
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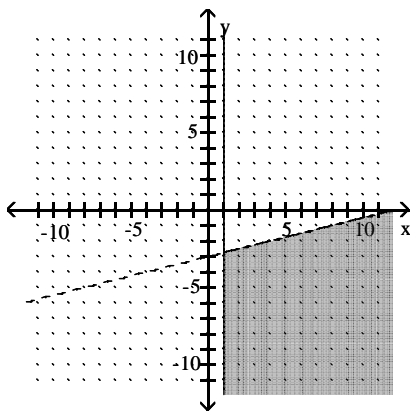
36)



37)



38)



39)

