Exam

Name_____

review math 0320 practice 0404700aafm032024350w

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Factor the binomial completely.

1) $81x^2 - 49$ 1) _____

Solve the equation.

2) $(2x + 1)(5x - 3) = 0$ 2) _____

3) $x^2 + 2x - 80 = 0$ 3) _____

4) $x^2 - 7x - 18 = 0$ 4) _____

5) $x^2 - x = 72$ 5) _____

6) $x^2 + 3x = 28$ 6) _____

7) $2x^2 - 7x - 9 = 0$ 7) _____

8) $15x^2 - 8x = 0$ 8) _____

9) $9x^2 - 16 = 0$ 9) _____

10) $3x^2 + 21x + 36 = 0$ 10) _____

11) $15x^2 + 31x + 1 = -9$ 11) _____

12) $10x^3 + 70x^2 + 120x = 0$ 12) _____

13) $y^3 + 6y^2 + 9y = 0$ 13) _____

14) $(3x + 2)(9x^2 + 12x + 4) = 0$ 14) _____

15) $9x^3 - 16x = 0$ 15) _____

16) $25x^3 - 30x^2 + 8x = 0$ 16) _____

Find the product and simplify.

17) $\frac{2y}{4y+2} \cdot \frac{10y+5}{7}$ 17) _____

Find the quotient and simplify.

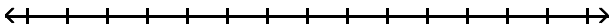
18) $\frac{x^2 - y^2}{x+y} \div \frac{x}{x^2 - xy}$ 18) _____

Perform the indicated operation. Simplify if possible.

19) $\frac{x^2 - 8x}{x-6} + \frac{12}{x-6}$ 19) _____

Solve the compound inequality. Graph the solution set.

20) $13 \le 4t + 5 \le 29$ 20) _____



Solve the absolute value equation.

21) $|x + 3| = 6$ 21) _____

Solve the inequality. Graph the solution set.

22) $|x + 18| < 9$ 22) _____

23) $|x + 3| > 4$ 23) _____

Find the square root. Assume that all variables represent positive real numbers.

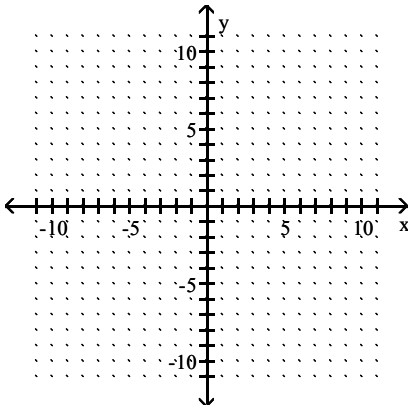
24) $\sqrt{16x^{10}}$ 24) _____

Evaluate.

25) If $f(x) = \sqrt{2x + 7}$, find the value of f(37). 25) _____

Identify the domain and then graph the function.

26) $f(x) = \sqrt{x} - 4$ 26) _____



Use radical notation to write the expression. Simplify if possible.

27) $256^{1/4}$ 27) _____

Simplify the radical expression. Assume that all variables represent positive real numbers.

28) $\sqrt{20}$ 28) _____

29) $\sqrt{320k^7q^8}$ 29) _____

30) $\sqrt[3]{512x^4y^5}$ 30) _____

Find the distance between the pair of points.

31) (–4, 2) and (–12, –4) 31) _____

Find the midpoint of the line segment whose endpoints are given.

32) (4, –8), (0, 4) 32) _____

Solve.

33) $\sqrt{x + 4} = 8$ 33) _____

34) $\sqrt{20x + 20} = x + 6$ 34) _____

Perform the indicated operation. Write the result in the form a + bi.

35) (6 + 6i) – (–9 + i) 35) _____

36) (5 + 3i)(5 – 3i) 36) _____

37) $\frac{8 + 7i}{9 - 2i}$ 37) _____

Use the square root property to solve the equation.

38) $(x - 5)^2 = 36$ 38) _____

Use the quadratic formula to solve the equation.

39) $x^2 + 24x + 144 = 0$ 39) _____

40) $x^2 + 18x + 70 = 0$ 40) _____

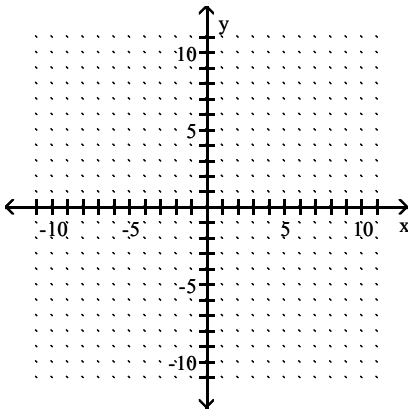
41) $x^2 - 8x + 20 = 0$ 41) _____

42) $2x^2 - 7x - 9 = 0$ 42) _____

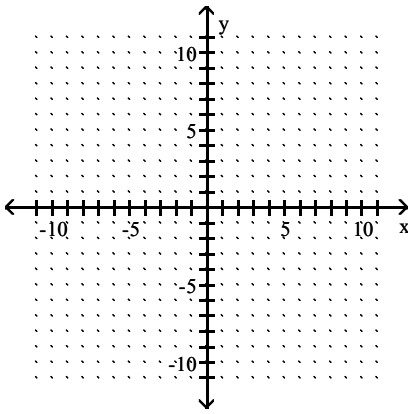
43) $7x^2 = -12x - 3$ 43) _____

Sketch the graph of the quadratic function. Give the vertex and axis of symmetry.

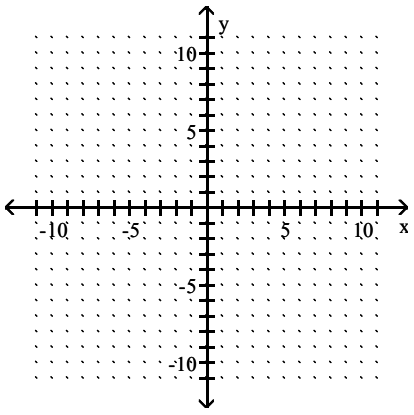
44) $f(x) = x^2 - 4$ 44) _____



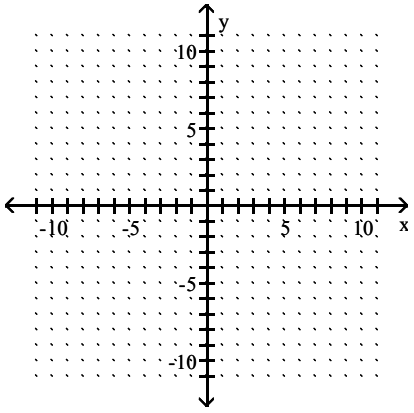
45) $f(x) = (x + 5)^2$ 45) _____



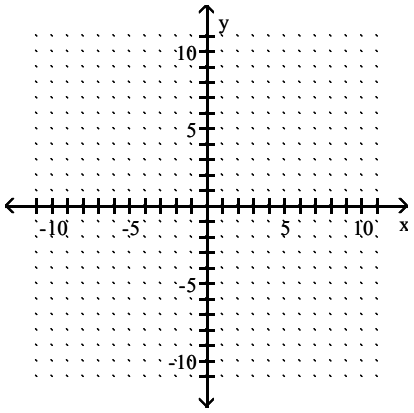
46) $f(x) = -x^2 - 5$ 46) _____



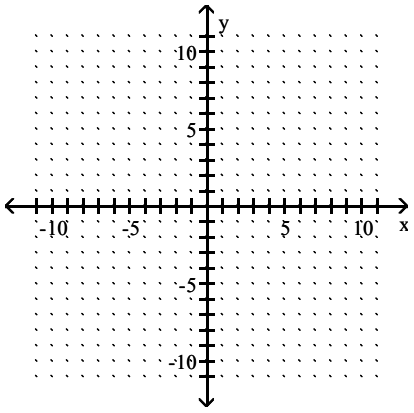
47) $f(x) = 2(x - 5)^2 + 3$ 47) _____



48) $f(x) = \frac{1}{5}(x + 4)^2 + 2$ 48) _____

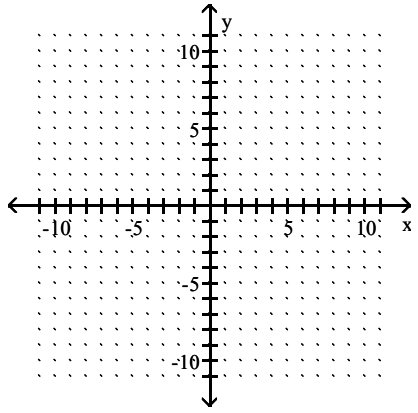


49) $f(x) = 3x^2 - 4$ 49) _____



50) $f(x) = -(x - 4)^2$

50) _____



1) $(9x + 7)(9x - 7)$

2) $-\frac{1}{2}, \frac{3}{5}$

3) $-10, 8$

4) $9, -2$

5) $-8, 9$

6) $-7, 4$

7) $\frac{9}{2}, -1$

8) $\frac{8}{15}, 0$

9) $\frac{4}{3}, -\frac{4}{3}$

10) $-4, -3$

11) $-\frac{5}{3}, -\frac{2}{5}$

12) $0, -3, -4$

13) $0, -3$

14) $-\frac{2}{3}$

15) $\frac{4}{3}, -\frac{4}{3}, 0$

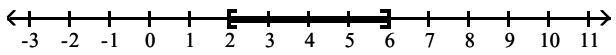
16) $\frac{4}{5}, \frac{2}{5}, 0$

17) $\frac{5y}{7}$

18) $(x - y)^2$

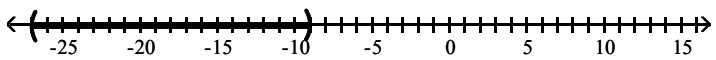
19) $x - 2$

20) $[2, 6]$

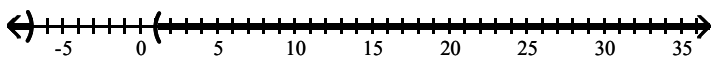


21) $-9, 3$

22) $(-27, -9)$



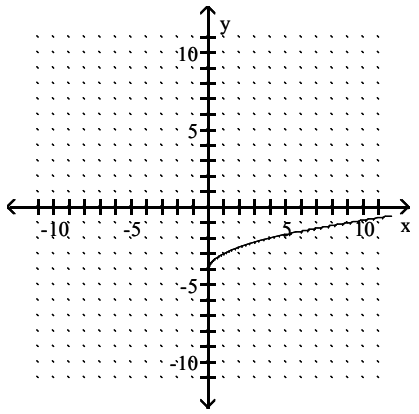
23) $(-\infty, -7) \cup (1, \infty)$



24) $4x^5$

25) 9

26) [0, ∞)



27) 4

28) $2\sqrt{5}$

29) $8k^3q^4\sqrt{5k}$

30) $8xy\sqrt[3]{xy^2}$

31) 10 units

32) $(2, -2)$

33) 60

34) 4

35) 15 + 5i

36) 34 + 0i

37) $\frac{58}{85} + \frac{79}{85}i$

38) 11, –1

39) –12

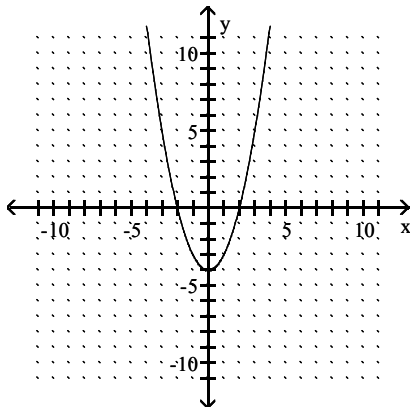
40) $-9 - \sqrt{11}, -9 + \sqrt{11}$

41) 4 – 2i, 4 + 2i

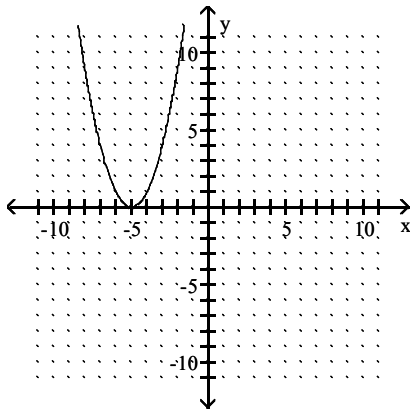
42) $\frac{9}{2}, -1$

43) $\frac{-6 - \sqrt{15}}{7}, \frac{-6 + \sqrt{15}}{7}$

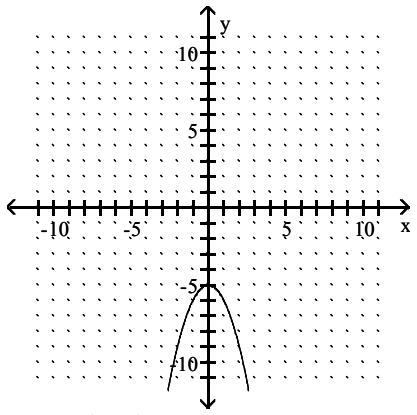
44) vertex (0, –4); axis x = 0



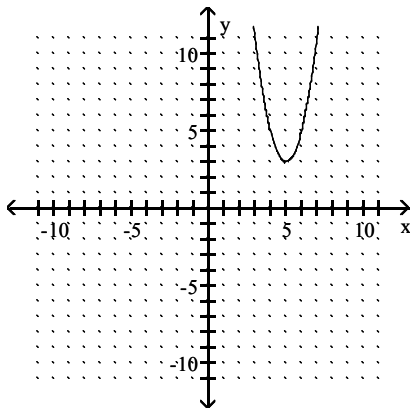
45) vertex (–5, 0); axis x = –5



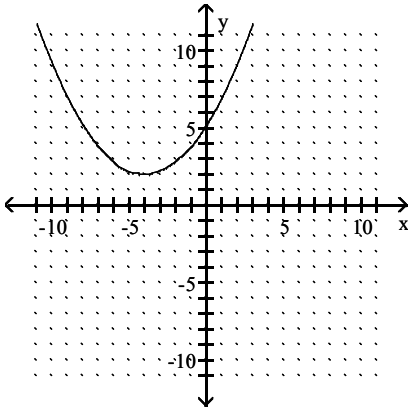
46) vertex (0, –5); axis x = 0



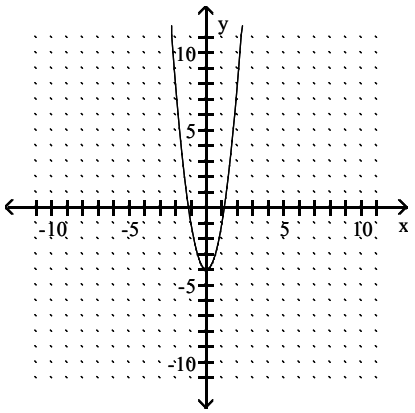
47) vertex (5, 3); axis x = 5



48) vertex (–4, 2); axis x = –4



49) vertex (0, –4); axis x = 0



50) vertex (4, 0); axis x = 4