

Summer Assignment

Factor each completely.

1) $9r^2 + 24r + 16$

2) $x^2 - 4x + 4$

3) $16b^2 + 24b + 9$

4) $n^2 - 2n + 1$

Solve each equation by taking square roots.

5) $-5 - 2p^2 = -33$

6) $49x^2 - 5 = 4$

7) $6n^2 - 1 = -35$

8) $3n^2 + 10 = 85$

Solve each equation by factoring.

9) $b^2 + b = 12$

10) $x^2 + 10x = -16$

11) $b^2 - 21 = 4b$

12) $b^2 - b = 20$

Solve each equation by completing the square.

13) $r^2 + 4r - 83 = -6$

14) $m^2 - 4m - 77 = 3$

15) $x^2 + 18x + 26 = -6$

16) $v^2 - 10v - 21 = -10$

Simplify each expression.

17) $(8m^3 + 2m^4 + 7) + (3m^4 - 3m + 4m^3)$

18) $(x^2 + x + 5x^4) - (3x - 4x^4 - x^2)$

$$19) (2n^4 + 2n^3 - 1) - (n^4 - 4 - 3n^3)$$

$$20) (7a^3 - 7 + 8a) - (4a^3 - 2 - 3a)$$

Find each product.

$$21) (6n + 6)(3n + 2)$$

$$22) (6x + 5)(6x - 3)$$

$$23) (6p - 4)(6p - 5)$$

$$24) (x - 7)(8x + 8)$$

Divide.

25) $(n^3 + 12n^2 + 37n + 31) \div (n + 8)$

26) $(n^3 + n^2 - 19n - 14) \div (n - 4)$

27) $(10p^3 + 33p^2 - 24p + 24) \div (p + 4)$

28) $(k^3 + 6k^2 - 25k + 26) \div (k - 2)$

Simplify.

29) $\sqrt{64m^3}$

30) $\sqrt[4]{48m^8}$

$$31) \sqrt{128x}$$

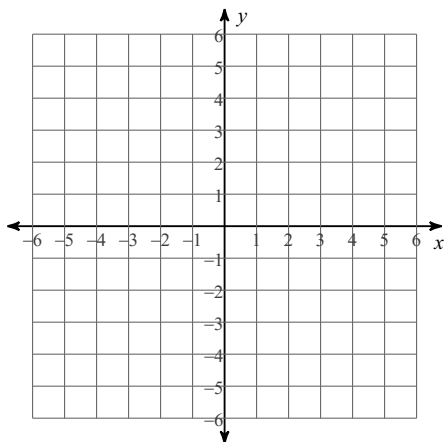
$$32) \sqrt[3]{162m^5}$$

$$33) \frac{2}{5-3\sqrt{5}}$$

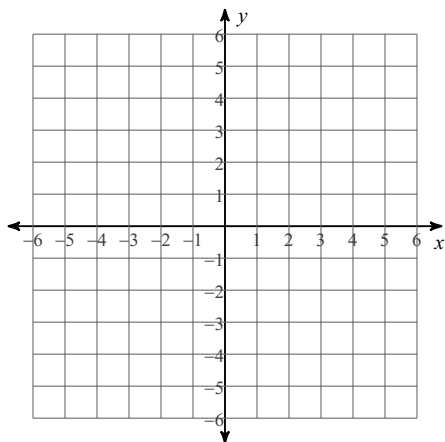
$$34) \frac{5\sqrt{2}}{\sqrt{3}-3}$$

Sketch the graph of each line.

35) $x - 5y = 20$

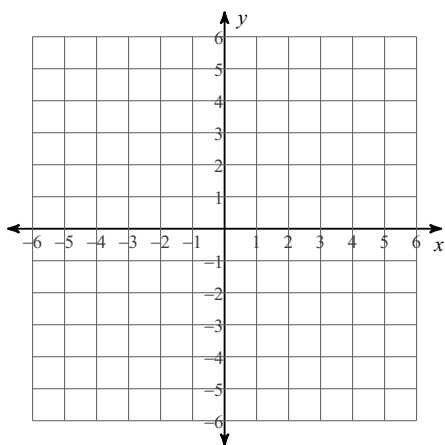


36) $y = 2$

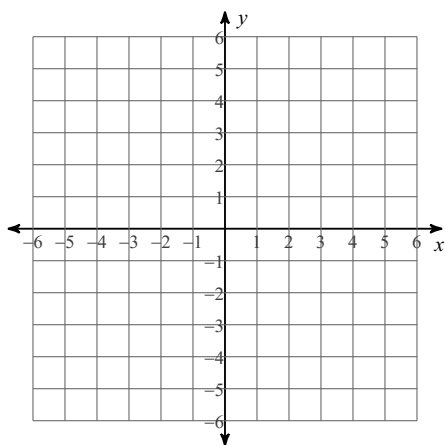


Graph each equation.

37) $y = |x - 3|$

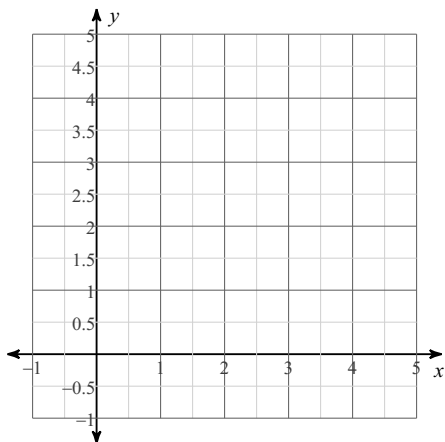


38) $y = -|x| - 3$

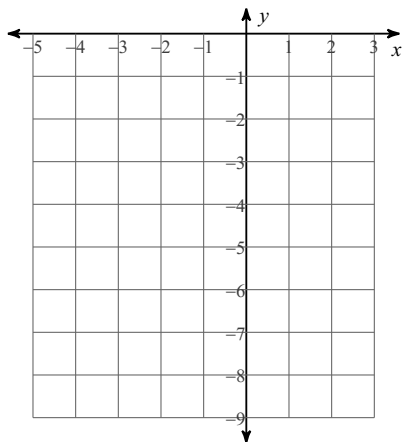


Sketch the graph of each function.

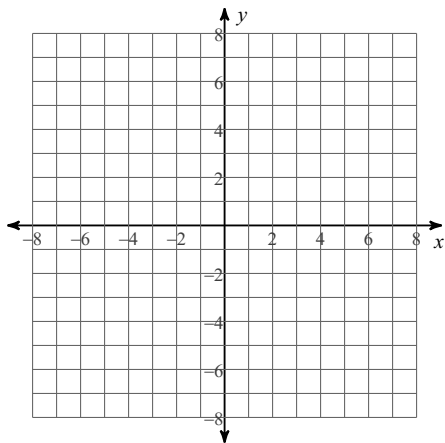
39) $y = -x^2 + 4x$



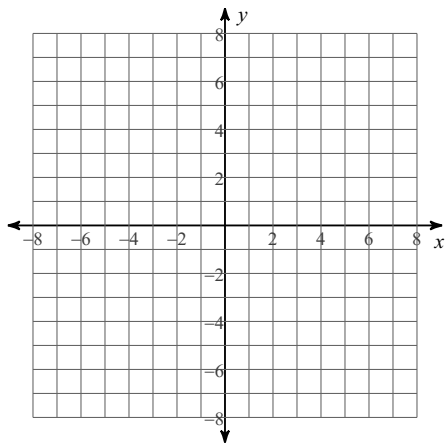
40) $y = -x^2 - 2x - 5$



41) $y = \sqrt{x+6}$

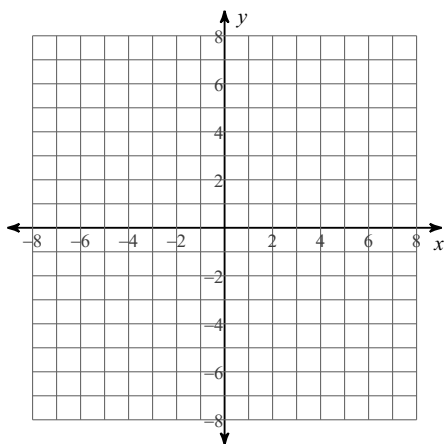


42) $y = \sqrt{x+3} - 4$

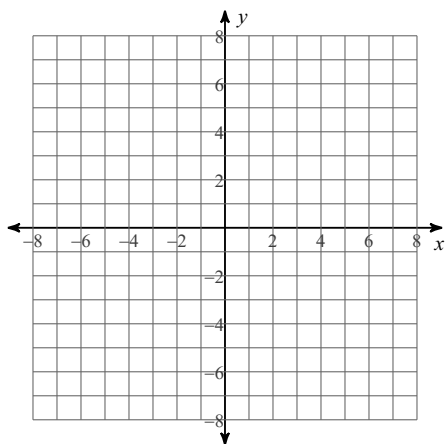


Graph each function.

43) $f(x) = -\frac{3}{x+1} + 2$

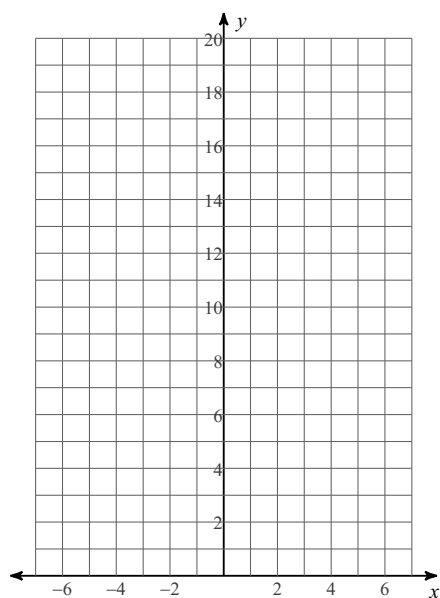


44) $f(x) = -\frac{3}{x-2}$



Sketch the graph of each function.

45) $y = \frac{1}{2} \cdot 5^x$



46) $y = \frac{1}{3} \cdot \left(\frac{1}{7}\right)^x$

