

Summer Assignment

Simplify each expression.

1) $-4(2n - 8) + 6(-5n - 3)$

2) $8(5 - x) + 5(-2x + 2)$

Solve each equation by completing the square.

3) $r^2 + 20r + 103 = 7$

4) $b^2 - 14b - 89 = 6$

5) $4x^2 - 8x - 91 = -3$

6) $7n^2 - 14n - 101 = -5$

Simplify.

7) $\frac{4}{\sqrt{3} + 6\sqrt{6}}$

8) $\frac{\sqrt{5}}{7 + 6\sqrt{7}}$

9) $\frac{\sqrt{6} + 6\sqrt{7}}{10 + 8\sqrt{5}}$

10) $\frac{\sqrt{10} + 10\sqrt{2}}{-7 + \sqrt{5}}$

Solve each equation.

$$11) \frac{|8k + 8|}{5} = 1$$

$$12) 7|-10n + 8| = 56$$

$$13) -3 - 7|5p + 7| = -59$$

$$14) -4|x - 1| - 5 = -21$$

Factor each completely.

$$15) u^4 + 10u^2$$

$$16) -x^4 + 9x^2 - 8$$

$$17) -a^4 + 6a^2 - 8$$

$$18) -x^4 + 11x^2 - 18$$

$$19) 100n^2 - 36$$

$$20) 2v^2 + 16v + 32$$

$$21) 16x^2 + 24x + 9$$

$$22) 75b^2 + 30b + 3$$

23) $392p^3 + 448p^2 + 147p + 168$

24) $56n^3 - 168n^2 - 49n + 147$

25) $30x^3 + 25x^2 - 6x - 5$

26) $35k^3 - 30k^2 - 42k + 36$

27) $196a^3 - 49a^2 + 28a - 7$

28) $224n^3 + 56n^2 + 128n + 32$

Simplify. Your answer should contain only positive exponents.

29) $\left(\frac{2u^2v^2}{u^2v^{-2} \cdot v^3}\right)^{-4}$

30) $\left(\frac{2x^0y^4 \cdot 2x^4}{2x^3y^4}\right)^2$

31) $\frac{(n^0p^4)^0 \cdot nm^4p^4}{2m^4n^0}$

32) $\frac{(m^{-1}p^2)^4}{m^4p^4 \cdot p^{-4}q^4}$

Evaluate each function.

33) $h(x) = x^2 + 2x$; Find $h(-1)$

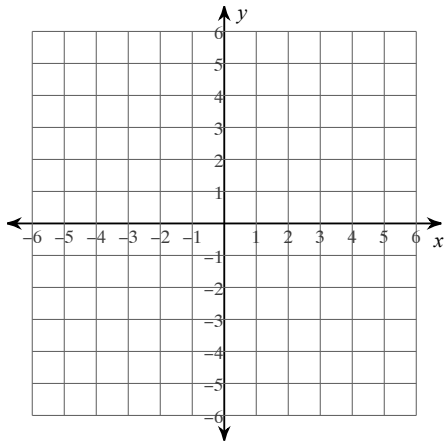
34) $p(x) = x^2 + 5x$; Find $p(-6)$

35) $g(t) = -2t - 5$; Find $g(t + 4)$

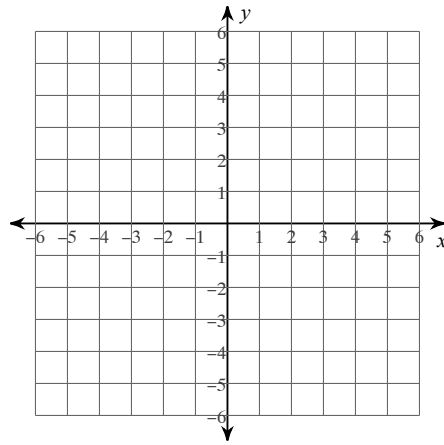
36) $h(n) = n^2 - 4$; Find $h(n - 2)$

Graph each equation.

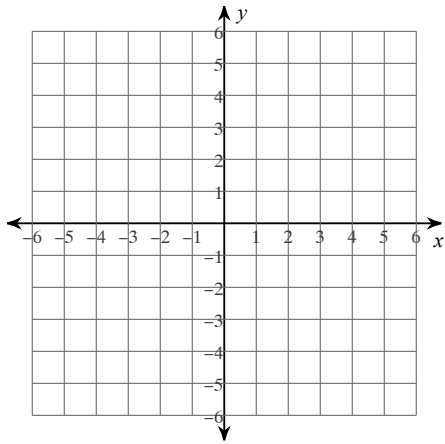
37) $y = 2|x + 4| + 4$



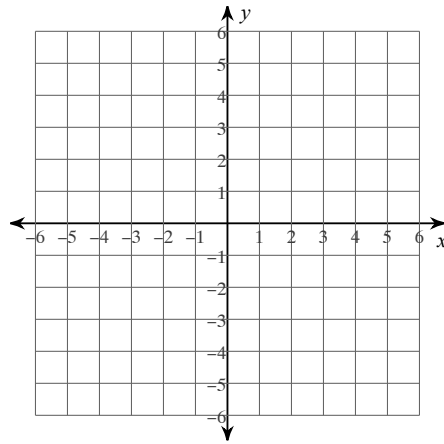
38) $y = 2|x + 3| - 2$



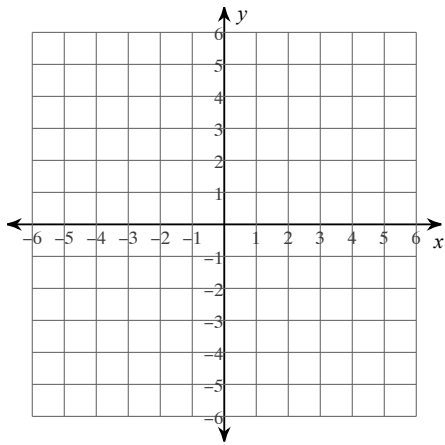
39) $y = -3|x + 4|$



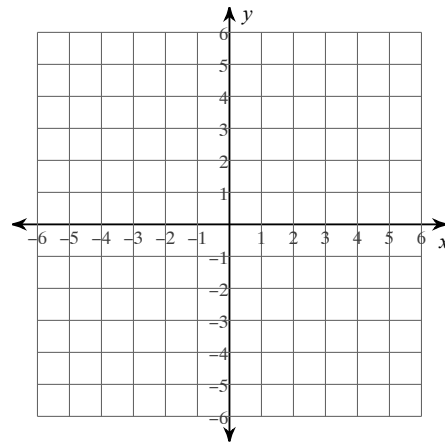
40) $y = -2|x| + 3$



$$41) y = 3|x - 4| + 3$$

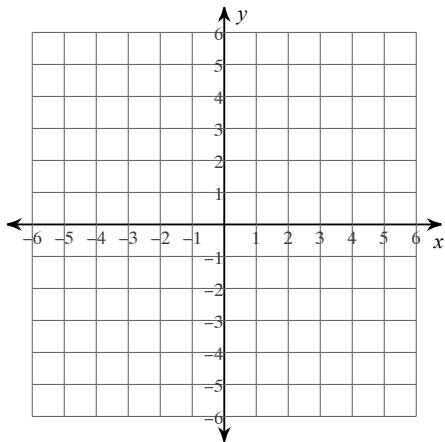


$$42) y = 2|x - 3| + 3$$

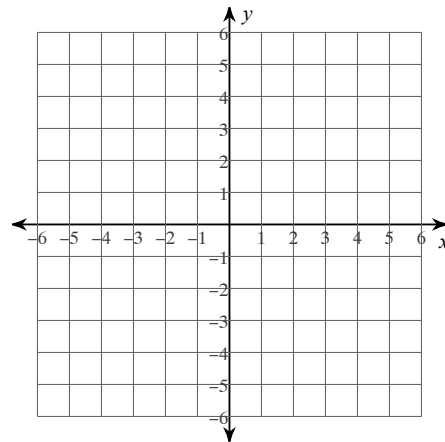


Sketch the graph of each linear inequality.

$$43) y < 7x + 2$$

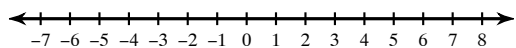


$$44) 7x - 5y < -15$$

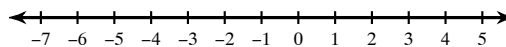


Solve each inequality and graph its solution.

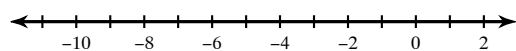
45) $|7m + 9| - 4 < -16$



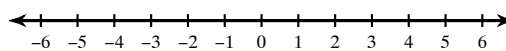
46) $\frac{|4n + 9|}{2} < 2$



47) $8|2r + 8| - 4 \geq 44$



48) $2|6x + 3| - 7 \leq 11$



Find each product.

49) $(8b + 2)(2b - 1)$

50) $(5n - 3)(4n - 5)$

51) $(2v^2 - 5v - 6)(5v + 7)$

52) $(5x^2 + 5x - 6)(4x - 6)$

53) $(a^2 + 7a + 2)(6a^2 - 7a + 2)$

54) $(7n^2 - 7n - 7)(6n^2 - 6n + 1)$

Simplify each sum.

55) $(r + 3r^2 + 4) + (7r^2 - 2 - 4r)$

56) $(6x^2 + 7x - 5x^3) + (2x^3 - 3x^2 + 8x)$

Simplify each difference.

57) $(7v^3 - v^2 - 7) - (7 + 2v^3 - 7v^2)$

58) $(6 - 4x^3 - 8x) - (6x^2 - 4 + 8x^3)$

Simplify each expression.

59) $\frac{x^2 + 8x - 9}{2x + 18}$

60) $\frac{n^2 - 3n - 10}{n^2 - 4n - 12}$

Solve each system by elimination.

61) $3x + 5y = -10$
 $5x + 4y = 5$

62) $5x - 7y = -2$
 $6x - 4y = -20$

Solve each system by graphing.

63) $y = -\frac{3}{4}x - 2$
 $y = 1$

64) $y = \frac{5}{3}x - 1$
 $y = \frac{1}{3}x + 3$

Solve each system by substitution.

65) $3x - 2y = 14$
 $y = 3x - 16$

66) $-8x + 4y = 16$
 $y = 6x + 8$

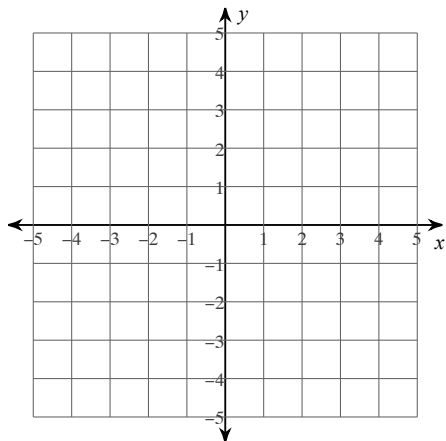
Solve each system.

67) $-6x - 2y = -24$
 $-3x + 6y - 6z = -30$
 $x - 4y + z = 26$

68) $-4r - 2t = 30$
 $5r - s - t = -26$
 $r + 5t = -21$

Sketch the solution to each system of inequalities.

69) $y > -6x - 3$
 $y \geq -6x - 1$



70) $3x + 2y \geq -2$
 $x - 2y > -6$

