

Geometry Summer Packet

Date _____ Period _____

Solve each equation.

1) $-373 = -7(1 + 8n) - 5n$

2) $-19 + 5n = 6 + 5(n - 5)$

3) $71 = -7(p - 7) - (p - 6)$

4) $-6(1 + 6k) - 5k = -6 - 2k$

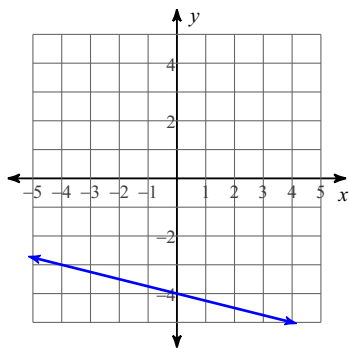
Solve each proportion.

5) $\frac{10}{m + 8} = \frac{9}{m + 6}$

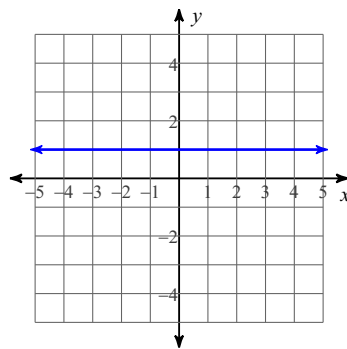
6) $\frac{9}{a - 10} = \frac{7}{a - 6}$

Write the slope-intercept form of the equation of each line.

7)



8)

**Write the slope-intercept form of the equation of the line through the given points.**

9) through: $(2, 5)$ and $(1, -3)$

10) through: $(0, 5)$ and $(-4, 4)$

Solve each system.

11) $-14x + 2y = 30$
 $7x + 10y = -4$

12) $-3x - 6y = 18$
 $-7x - 10y = 30$

13) $y = 6x + 12$
 $-12x + 2y = 24$

14) $-3x + 6y = -9$
 $-2x + y = 9$

Simplify each expression.

15) $(8n + 7n^4 - 8n^3) + (6n^2 - 3n - 8n^4)$

16) $(6n^3 + 2n^2 + 2n) - (4n - 6n^2 + 6n^3)$

Find each product.

17) $(6a - 3)(5a + 8)$

18) $(3n - 7)(7n + 7)$

19) $(4v - 5)^2$

20) $(7a - 1)(7a + 1)$

Simplify.

21) $\sqrt{128}$

22) $\sqrt{216}$

23) $\sqrt{144x^2}$

24) $\sqrt{112v^3}$

25) $-4\sqrt{5} \cdot \sqrt{20}$

26) $3\sqrt{6} \cdot -\sqrt{8}$

27) $\sqrt{15}(\sqrt{10} + 3)$

28) $-\sqrt{3}(3\sqrt{10} - 3\sqrt{6})$

29) $-2\sqrt{45} + 2\sqrt{5} - 3\sqrt{54}$

30) $2\sqrt{18} + 2\sqrt{2} - 3\sqrt{8}$

31) $\frac{\sqrt{2}}{\sqrt{3}}$

32) $\frac{4}{4\sqrt{2}}$

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

34) $\frac{4 + \sqrt{5}}{2\sqrt{5}}$

Simplify. Your answer should contain only positive exponents.

35) $2yx^3 \cdot 3x^2$

36) $a^3b^2 \cdot 4b^0$

37) $(4ab^2)^3$

38) $(2xy^4)^2$

39) $\frac{22x}{33yx^2}$

40) $\frac{3xy^3}{12yx^0}$

41) $2a^{-3}b^{-3} \cdot (a^{-1}b^4)^{-3}$

42) $(2x^3y^3 \cdot (xy)^2)^{-2}$

$$43) \frac{3x^0 y^0}{4x^{-2} y^3 \cdot x^{-4} y^3 \cdot 4x^{-4} y^4}$$

$$44) \frac{vu^2 \cdot u^3 v^{-1}}{3vu^4 \cdot 4u^{-2} v^2}$$

$$45) \left(\frac{a^2 b^{-3}}{2a^2 \cdot a^3 b^4} \right)^{-4}$$

$$46) \frac{2u^4 \cdot 2u^{-3} v^{-2}}{(2u^4)^{-3}}$$

Factor Completely.

$$47) 70x^3 - 49x$$

$$48) -30x^4 - 9x$$

$$49) x^2 - 18x + 80$$

$$50) 2v^2 + 12v - 14$$

$$51) 3a^2 + 23a - 70$$

$$52) 3p^2 - 35p + 50$$

$$53) 4x^2 - 9$$

$$54) 16m^2 + 40m + 25$$

$$55) 9n^2 - 12n - 60$$

$$56) 9v^2 + 51v - 18$$

Solve each equation by taking square roots.

$$57) 64k^2 + 6 = 106$$

$$58) 10p^2 - 6 = 444$$

Solve each equation by factoring.

59) $x^2 - 2x - 24 = 0$

60) $p^2 + 6p + 2 = -6$

61) $v^2 + 4v - 10 = 2$

62) $n^2 + 4 = -4n$

63) $p^2 + 3 = 4p$

64) $-b^2 + 3b = -2b^2 + 28$

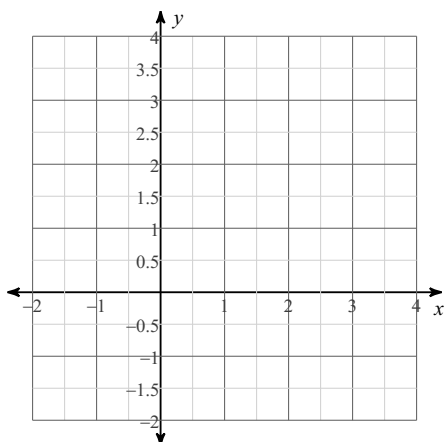
Solve each equation with the quadratic formula.

65) $11x^2 - 9x = 18$

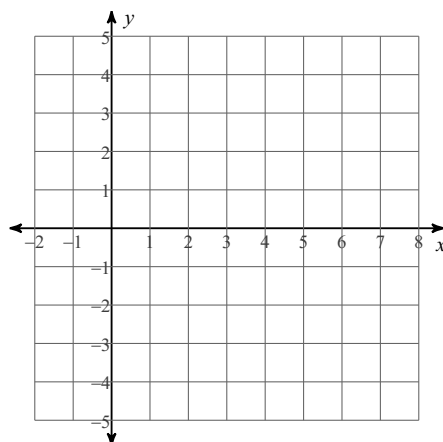
66) $3x^2 - 7x = -1$

Sketch the graph of each function.

67) $y = -(x - 1)^2 + 3$

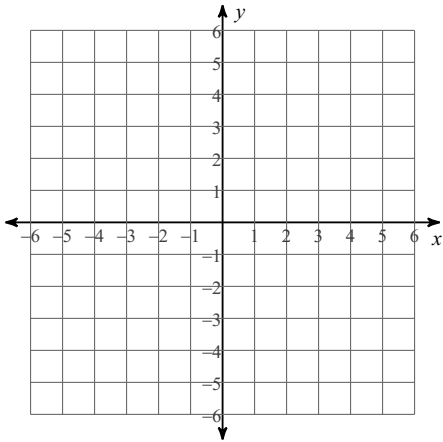


68) $y = 2(x - 1)^2 - 4$

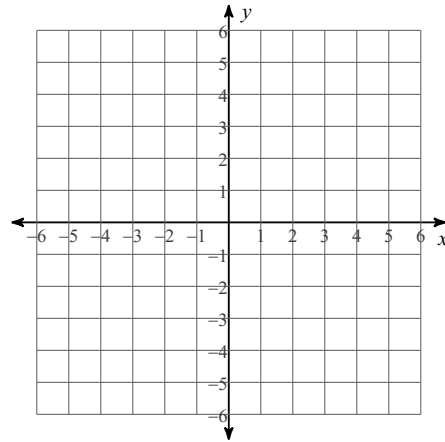


Sketch the graph of each linear inequality.

69) $y > -5x - 3$



70) $10x + 3y \geq -15$



71) The senior classes at High School A and High School B planned separate trips to the indoor climbing gym. The senior class at High School A rented and filled 14 vans and 1 bus with 290 students. High School B rented and filled 7 vans and 14 buses with 658 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

72) Abhasra and Ming are selling flower bulbs for a school fundraiser. Customers can buy packages of tulip bulbs and bags of daffodil bulbs. Abhasra sold 6 packages of tulip bulbs and 5 bags of daffodil bulbs for a total of \$117. Ming sold 12 packages of tulip bulbs and 3 bags of daffodil bulbs for a total of \$129. What is the cost each of one package of tulips bulbs and one bag of daffodil bulbs?

73) Totsakan's school is selling tickets to the annual talent show. On the first day of ticket sales the school sold 12 senior citizen tickets and 8 child tickets for a total of \$232. The school took in \$80 on the second day by selling 4 senior citizen tickets and 3 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.