

# Summer Math Packet

**Evaluate each expression.**

1)  $7.1 - (-0.1) - 1.6$

2)  $\frac{2}{7} - 2\frac{1}{3}$

**Evaluate each using the values given.**

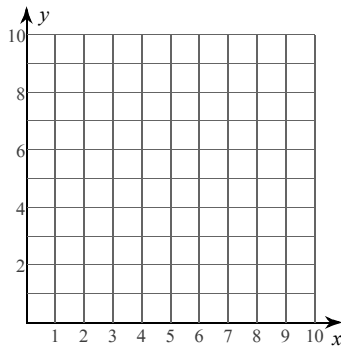
3)  $h - (j - j)$ ; use  $h = 4$ , and  $j = 4$

**Write each as an algebraic expression.**

4) 5 less than y

**Plot each point.**

5)  $D(6, 10)$     $E(7, 4)$     $F(0, 2)$   
 $G(10, 9)$     $H(1, 4)$



**Write each as a decimal. Round to the hundredths place.**

6) 6%

7) 90%

**Solve each problem.**

8) 23 is what percent of 33?

9) What percent of 94 is 2?

**Solve each equation.**

10)  $123 = -3(-1 + 5r)$

11)  $6(1 + 4x) = 8x + 38$

12) Kali won 87 super bouncy balls playing the bean bag toss at the county fair. At school she gave four to every student in her math class. She only has 7 remaining. How many students are in her class?

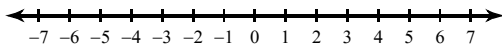
**Solve each equation for the indicated variable.**

13)  $\frac{k}{a} = \frac{v}{w}$ , for  $a$

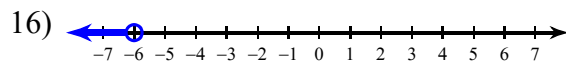
14)  $ma = n + p$ , for  $a$

**Draw a graph for each inequality.**

15)  $n > 2$



**Write an inequality for each graph.**



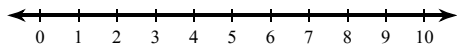
**Solve each inequality.**

17)  $-5 \leq \frac{2 + p}{2}$

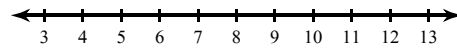
18)  $-10r - 1 < 119$

**Solve each inequality and graph its solution.**

19)  $x + 2 - 5x < -14$

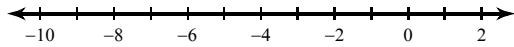


20)  $4x - 13 > 3x - 5$

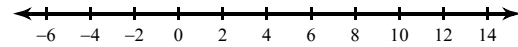


**Solve each compound inequality and graph its solution.**

21)  $-21 < 7 + 7x < 0$

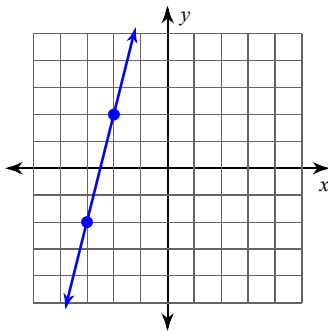


22)  $8 + 8x < 0$  or  $3 - 10x < -87$

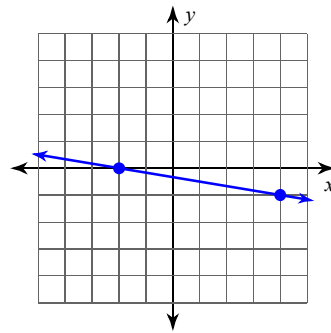


**Find the slope of each line.**

23)



24)



**Find the slope of the line through each pair of points.**

25)  $(12, 6), (17, 18)$

**Find the slope of each line.**

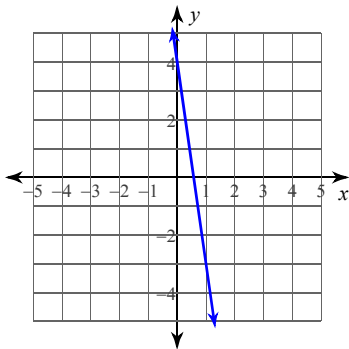
26)  $y = -\frac{1}{5}x$

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

27) Slope =  $\frac{5}{3}$ , y-intercept =  $-4$

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

28)



29)  $3x + 2y = 8$

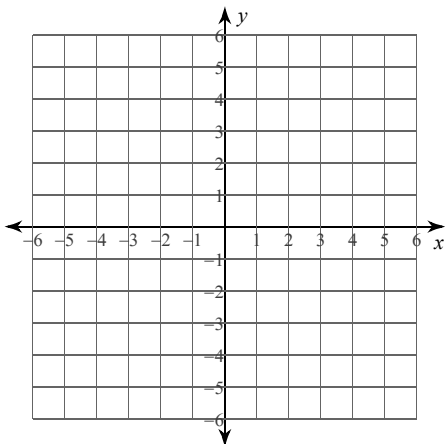
30)  $y + 2 = -4(x - 1)$

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

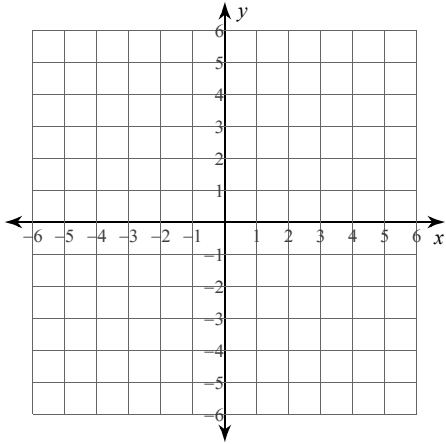
31) through:  $(5, 5)$  and  $(4, -2)$

Sketch the graph of each line.

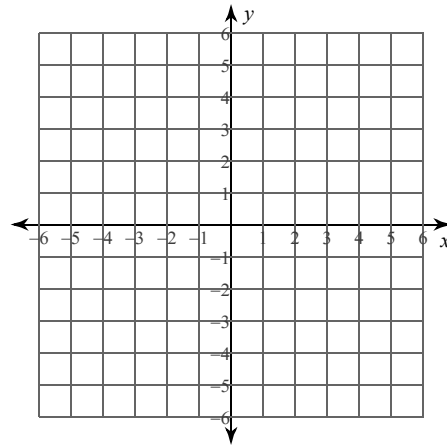
32)  $y = -\frac{2}{5}x + 2$



$$33) y = \frac{3}{5}x - 3$$

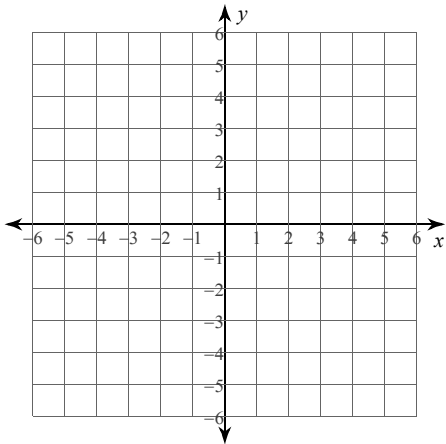


$$34) 3x + 4y = 8$$



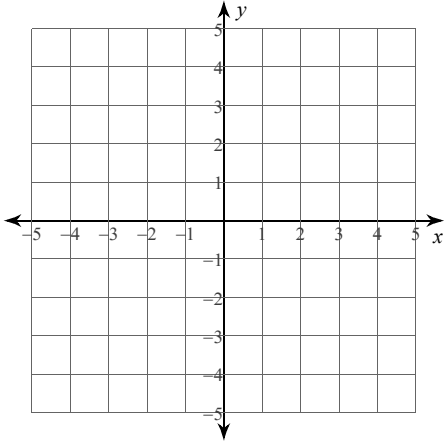
**Sketch the graph of each linear inequality.**

$$35) y \geq -\frac{8}{3}x + 5$$

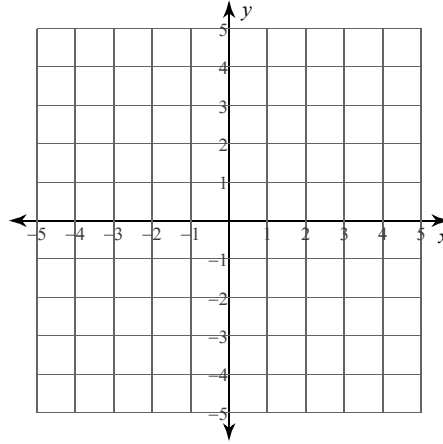


**Solve each system by graphing.**

$$36) \begin{aligned} y &= -\frac{3}{2}x - 1 \\ y &= -\frac{3}{2}x + 4 \end{aligned}$$



$$37) \begin{aligned} y &= -\frac{1}{2}x + 1 \\ y &= -\frac{3}{2}x - 3 \end{aligned}$$



**Solve each system by substitution.**

$$38) \begin{aligned} 3x + 6y &= 15 \\ x - 3y &= 5 \end{aligned}$$

$$39) \begin{aligned} x - 8y &= 11 \\ 5x - 2y &= 17 \end{aligned}$$

**Solve each system by elimination.**

$$40) \begin{aligned} 4x + 2y &= 14 \\ 2x - 2y &= -2 \end{aligned}$$

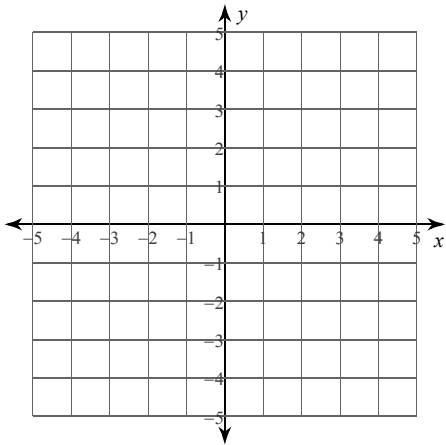
$$41) \begin{aligned} -9x + 6y &= -27 \\ 5x - y &= 29 \end{aligned}$$

42) The school that Jessica goes to is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 9 senior citizen tickets and 14 child tickets for a total of \$227. The school took in \$171 on the second day by selling 3 senior citizen tickets and 12 child tickets. What is the price each of one senior citizen ticket and one child ticket?

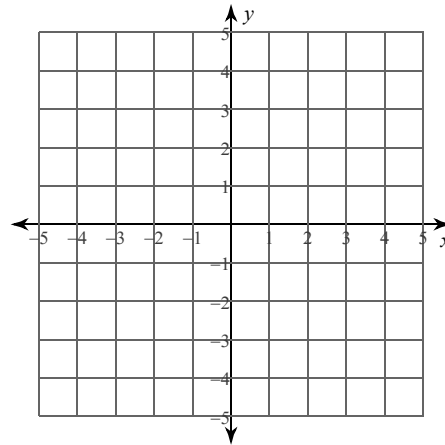
43) Jessica and Lisa are selling cheesecakes for a school fundraiser. Customers can buy New York style cheesecakes and strawberry cheesecakes. Jessica sold 7 New York style cheesecakes and 2 strawberry cheesecakes for a total of \$62. Lisa sold 14 New York style cheesecakes and 5 strawberry cheesecakes for a total of \$134. Find the cost each of one New York style cheesecake and one strawberry cheesecake.

Sketch the solution to each system of inequalities.

$$44) \begin{aligned} y &\geq -x + 1 \\ y &\leq \frac{1}{2}x - 2 \end{aligned}$$



$$45) \begin{aligned} y &\geq \frac{1}{2}x - 2 \\ y &\geq 2x + 1 \end{aligned}$$



Simplify. Your answer should contain only positive exponents.

$$46) 4y^{-4}$$

$$47) yx^4 \cdot -4x^{-4}$$

$$48) (y^{-4})^3$$

$$49) -x^{-2} \cdot -2x^3 \cdot (-x)^4$$

$$50) \frac{-3m^{-4}n^4}{-2m}$$

$$51) \frac{2v^3}{(2u^{-2}v^2 \cdot 2u^4v^3)^{-3}}$$

**Write each number in scientific notation.**

52) 0.000095

**Write each number in standard notation.**

53)  $1.89 \times 10^4$

**Simplify. Write each answer in scientific notation.**

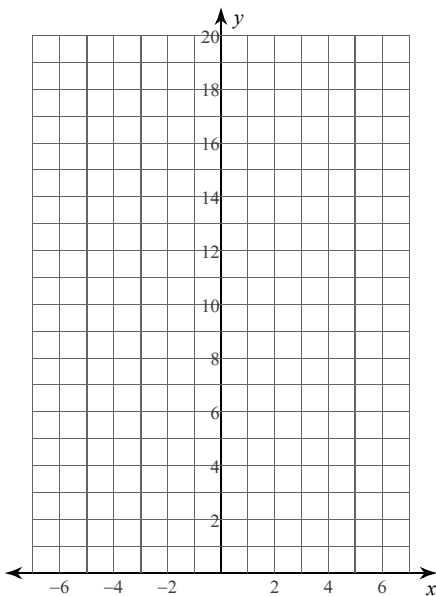
54)  $(9.8 \times 10^2)(2.2 \times 10^{-2})$

55)  $(8 \times 10^{-2})^{-5}$

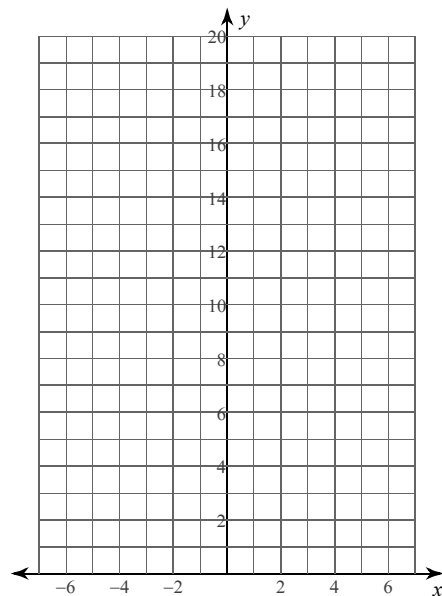
56)  $\frac{5.5 \times 10^{-2}}{5.6 \times 10^{-5}}$

**Sketch the graph of each function.**

57)  $y = \left(\frac{1}{2}\right)^x$



58)  $y = 2^x$





**Simplify each expression.**

59)  $(4 + x^3 + 8x) + (x - 4 - 5x^3)$

60)  $(5p^3 + 6p^2 - 3p^4) - (6p^4 - 7p^3 + p)$

**Find each product.**

61)  $6x^2(7x^2 - 8x - 3)$

62)  $(8k - 5)(2k + 7)$

**Factor the common factor out of each expression.**

63)  $40 + 24v - 8v^2$

64)  $9a^2 + 9a + 63$

**Factor each completely.**

65)  $15b^3 - 25b^2 + 6b - 10$

66)  $3n^3 + 24n^2 - 8n - 64$

67)  $m^2 - 5m - 14$

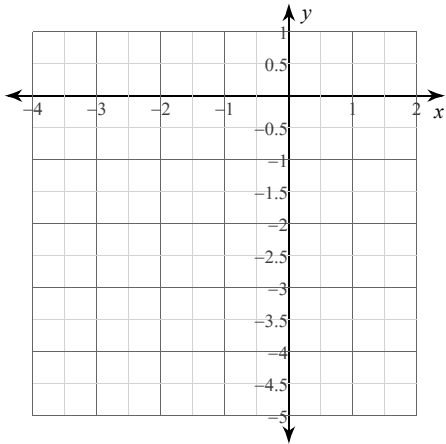
68)  $6n^2 + n - 15$

69)  $9v^2 + 24v + 16$

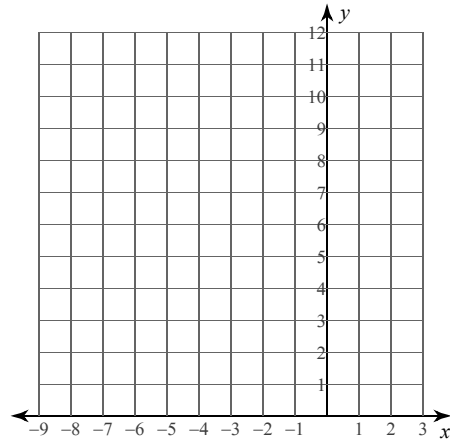
70)  $25m^2 - 9$

**Sketch the graph of each function.**

71)  $y = x^2 + 2x - 3$



72)  $y = 2x^2 - 4x + 5$



**Solve each equation by taking square roots.**

73)  $n^2 = 36$

74)  $6p^2 - 1 = 5$

**Solve each equation with the quadratic formula.**

75)  $5v^2 = -4 + 9v$

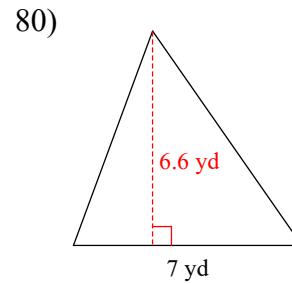
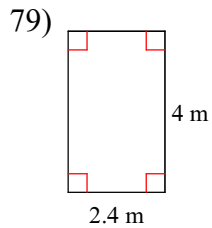
76)  $4n^2 + 8n = 45$

**Simplify.**

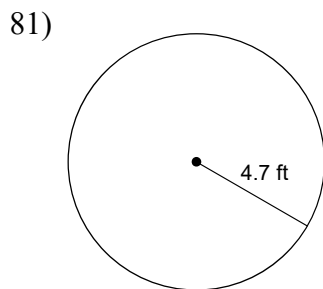
77)  $\sqrt{12}$

78)  $2\sqrt{18}$

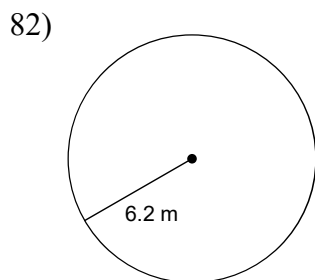
**Find the perimeter and area of each.**



**Find the area of each. Use your calculator's value of  $\pi$ . Round your answer to the nearest tenth.**



**Find the circumference of each circle. Use your calculator's value of  $\pi$ . Round your answer to the nearest tenth.**



**Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.**

