

Honors Geometry Summer Packet

Name _____

Date _____

**This summer packet must be printed out and completed by the first day of school.
Please show all of your work and circle your answer choices.
There will be a test on this packet at the end of the first week.**

Solve each proportion.

1) $\frac{2}{6} = \frac{a}{9}$

2) $\frac{k}{6} = \frac{5}{2}$

3) $\frac{k}{10} = \frac{5k-3}{5}$

4) $\frac{2a-9}{a} = \frac{4}{3}$

Solve each equation.

5) $-14 = 3m - m$

6) $-16 = -2r - 2r$

7) $\frac{14}{9}a = \frac{14}{3}$

8) $x + \frac{5}{2} = \frac{5}{2}$

9) $-3(4 - 3x) = 3x - 36$

10) $9 + 8n = 3(2n + 7)$

11) $-10(1 - 8x) = 7(12x - 6)$

12) $-2(m - 12) = -6 + 3(m - 5)$

13) $-\frac{11}{4} = -\frac{8}{5}x + 1 - 1\frac{3}{4}$

14) $\frac{1}{3}b - \frac{3}{2}b = \frac{35}{12}$

Solve each equation for the indicated variable.

15) $g = y - xc$, for x

16) $\frac{c}{a} = d - r$, for a

17) $\frac{m}{x} = n - p$, for x

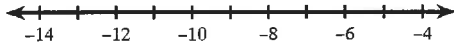
18) $z = am + b$, for a

$$19) z = \frac{xy}{m}, \text{ for } x$$

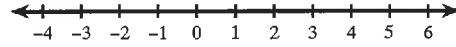
$$20) g = y - \frac{c}{x}, \text{ for } x$$

Solve each inequality and graph its solution.

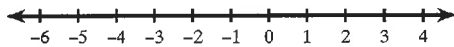
$$21) -4 + 8(8 - 5b) \leq 300$$



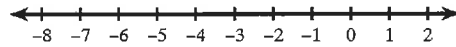
$$22) -256 > 8(-6b - 8)$$



$$23) 7x - 29 < -6(-x + 5)$$



$$24) -2 - 6(1 - 5n) > 3n - 8$$



Solve each compound inequality.

$$25) -25 \leq 7k + 3 < 10$$

$$26) -2 < -2 - 9k < 43$$

Simplify.

$$27) \sqrt{54}$$

$$28) \sqrt{75}$$

$$29) \sqrt{30}$$

$$30) \sqrt{12}$$

$$31) -3\sqrt{36}$$

$$32) -3\sqrt{45}$$

$$33) 5\sqrt{15} \cdot \sqrt{15}$$

$$34) 5\sqrt{3} \cdot \sqrt{12}$$

$$35) 5\sqrt{3} \cdot \sqrt{6}$$

$$36) \frac{\sqrt{5}}{\sqrt{2}}$$

$$37) \frac{\sqrt{5}}{5\sqrt{3}}$$

$$38) -\frac{3}{2\sqrt{2}}$$

39) $3\sqrt{6} - 3\sqrt{6}$

40) $2\sqrt{8} - \sqrt{18}$

Solve each quadratic equation by taking square roots.

41) $x^2 = 64$

42) $n^2 = 81$

43) $-10b^2 = -440$

44) $-10a^2 = -800$

Solve each equation by factoring.

45) $(2x - 5)(x + 8) = 0$

46) $(8x - 1)(x + 3) = 0$

47) $m^2 - 7m + 6 = 0$

48) $x^2 + x - 6 = 0$

49) $15r^2 - 2r - 1 = 0$

50) $3r^2 + 7r + 4 = 0$

Solve each equation with the quadratic formula.

51) $x^2 - 2x - 8 = 0$

52) $2b^2 - 2b - 7 = 0$

Find the slope of a line parallel to each given line.

53) $10x + y = 5$

54) $2x + 3y = 0$

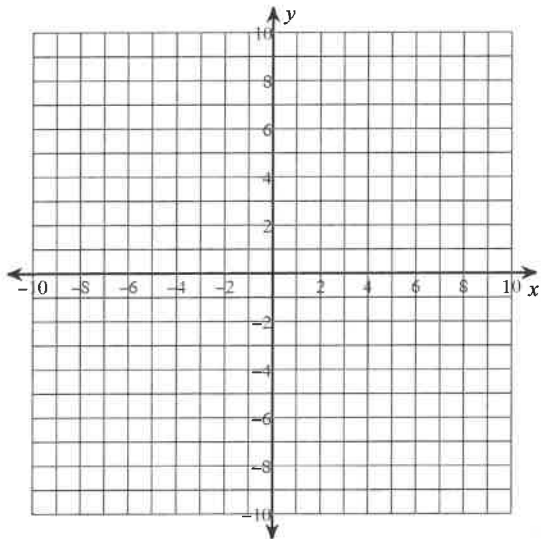
Find the slope of a line perpendicular to each given line.

55) $y = -\frac{1}{2}x + 2$

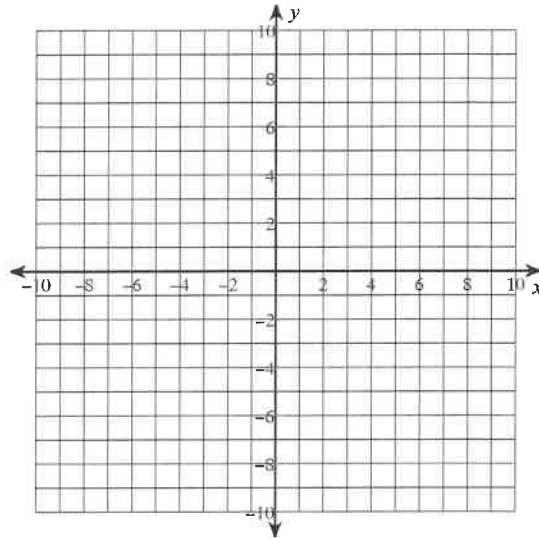
56) $y = -\frac{3}{2}x + 5$

Solve each system by graphing.

$$57) \begin{aligned} y &= \frac{1}{2}x - 8 \\ y &= 6x + 3 \end{aligned}$$



$$58) \begin{aligned} y &= -\frac{12}{5}x + 7 \\ y &= -5 \end{aligned}$$



Solve each system by substitution.

$$59) \begin{aligned} -4x - 2y &= 8 \\ y &= -6x \end{aligned}$$

$$60) \begin{aligned} -7x - 6y &= -5 \\ y &= -4x + 15 \end{aligned}$$

Solve each system by elimination.

$$61) \begin{aligned} -3x - y &= -15 \\ -7x + y &= -25 \end{aligned}$$

$$62) \begin{aligned} -5x - y &= 28 \\ 5x - 4y &= 12 \end{aligned}$$

$$63) \begin{aligned} x - 3y &= -2 \\ -10x + 2y &= -8 \end{aligned}$$

$$64) \begin{aligned} -8x + y &= 24 \\ -5x + 5y &= -20 \end{aligned}$$

Write each as an algebraic expression.

65) n less than 18

66) the sum of 7 and t

67) the quotient of n and 3

68) 18 decreased by w

69) 11 less than n is 43

70) n squared is equal to 22