

## Geometry Summer Homework

**All work must be shown on separate paper to receive credit!**

Solve each equation. When applicable, leave answers as simplified fractions. (HINT: use inverse operations when moving terms to the other side of the equation. For questions 10-15, cross multiply).

1.  $3p + 7 = -4(4 - 6p) + 2$

2.  $-6 + 2(-3n + 6) = -8 - 8n$

3.  $7(-2b + 3) - 5 = -32 - 6b$

4.  $-3(5 + 7x) = 27 - 7x$

5.  $2 - 8x = 2(1 + 5x)$

6.  $-6x + 29 = 7(7x - 3) - 5x$

7.  $8(1 + 3a) + 4(-6a - 2) = -4a$

8.  $-3 - 3(7 + 4x) = -8(x + 7)$

9.  $-4(p + 4) = -(p - 8)$

10.  $\frac{5}{8} = \frac{10}{x - 6}$

11.  $\frac{6}{5x + 8} = \frac{2}{3}$

12.  $\frac{4}{x + 10} = \frac{4}{5}$

13.  $\frac{5}{x - 9} = \frac{8}{x + 5}$

14.  $\frac{x + 10}{x - 7} = \frac{8}{9}$

15.  $2 = \frac{x + 4}{8 - x - 4}$

Simplify. Leave answers as reduced improper fractions. (HINT: Addition and subtraction need common denominators. Change all mixed numbers to improper fractions before you begin).

16.  $\frac{8}{7} - 2\frac{1}{2}$

17.  $\frac{-1}{2} - 4\frac{3}{4}$

18.  $3\frac{3}{4} + 2\frac{5}{7}$

19.  $-1\frac{3}{5} - \frac{9}{7}$

20.  $\frac{-3}{2} \times \frac{3}{2}$

21.  $\frac{-13}{5} \times \frac{3}{5}$

22.  $1\frac{1}{10} \times \frac{-1}{7}$

23.  $2\frac{3}{4} \times -3\frac{1}{3}$

24.  $\frac{-5}{3} \div \frac{15}{8}$

25.  $\frac{1}{8} \div \frac{6}{7}$

26.  $-2\frac{3}{4} \div \frac{13}{9}$

27.  $5\frac{1}{2} \div \frac{-11}{9}$

Simplify each radical. Answers should be exact (no decimals!). (HINT: Make a factor tree).

28.  $\sqrt{48}$

29.  $\sqrt{147}$

30.  $\sqrt{27}$

31.  $\sqrt{300}$

32.  $\sqrt{72}$

33.  $\sqrt{8}$

34.  $\sqrt{504}$

35.  $\sqrt{40}$

36.  $\sqrt{128}$

37.  $\sqrt{90}$

Rationalize each denominator (remove the radical from the denominator). Answers should be exact (no decimals!). (HINT: Multiply the top and the bottom of the fraction by the radical in the bottom and simplify).

38.  $\frac{3}{\sqrt{3}}$

39.  $\frac{7}{\sqrt{2}}$

40.  $\frac{\sqrt{2}}{\sqrt{3}}$

41.  $\frac{12}{\sqrt{3}}$

42.  $\frac{20}{\sqrt{2}}$

Find the missing side of the right triangle (leave answers as simplified radicals). (HINT: Use the Pythagorean Theorem).

43.  $a = 4, b = 8$

44.  $a = 6, b = 3$

45.  $a = 6, c = 10$

46.  $b = 6, c = 24$

47.  $a = 1, b = 1$

48.  $b = 8, c = 21$

Graph. (HINT: In  $y = mx + b$ ,  $m$  is the slope, rise/run, and  $b$  is the  $y$ -intercept. When graphing, plot the  $y$ -intercept point and count the slope to find more points).

49.  $y = 2x - 3$

50.  $y = -3x + 1$

51.  $y = x$

52.  $y = -x$

53.  $y = 1/3x$

54.  $x = 2$

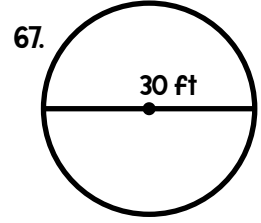
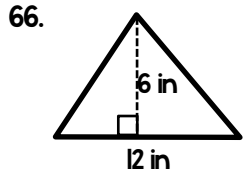
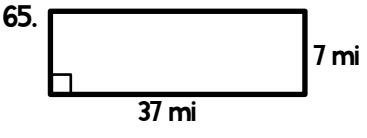
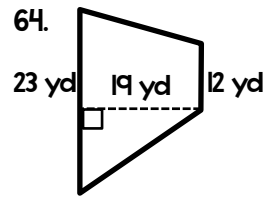
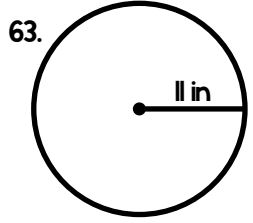
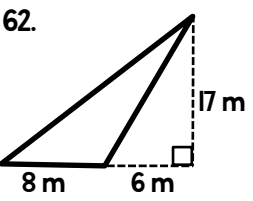
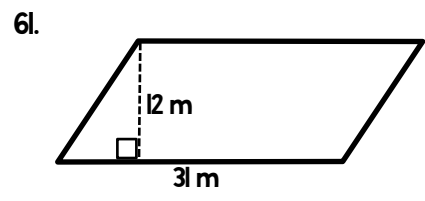
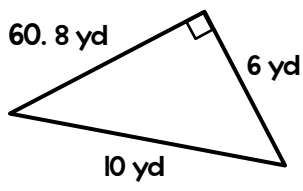
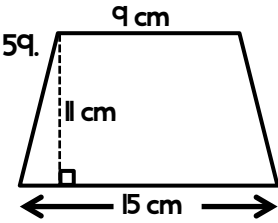
55.  $y = -3$

56.  $y = 5$

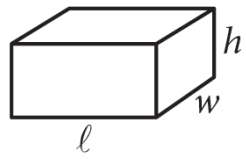
57.  $x = -5$

58.  $y = -2/3x + 3$

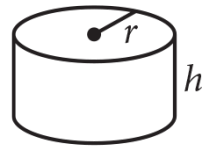
Find the area of each figure. (HINT: Use the area formulas: parallelogram/square/rectangle,  $A = bh$ ; triangle:  $A = \frac{1}{2}bh$ ; trapezoid:  $A = \frac{1}{2}h(b_1 + b_2)$ ; circle:  $A = \pi r^2$ ; remember that the height is always perpendicular to the base. After you plug the values into the formula, use order of operations).



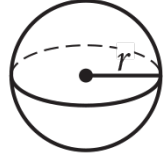
Find the volume of each figure. (HINT: Use the volume formulas; remember that the height is always perpendicular to the base. After you plug the values into the formula, use order of operations).



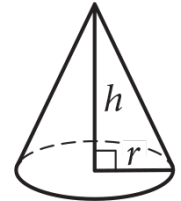
$V = lwh$



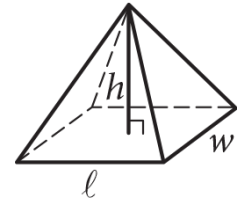
$V = \pi r^2 h$



$V = \frac{4}{3} \pi r^3$



$V = \frac{1}{3} \pi r^2 h$



$V = \frac{1}{3} lwh$

