

## Geometry Summer Work

A. Perform the indicated operation and write all answers in the form of  $\frac{a}{b}$  in lowest terms. Do not use a calculator.

1.  $\frac{3}{7} + \frac{2}{7}$

2.  $\frac{5}{9} - \frac{2}{9}$

3.  $\frac{3}{5} + \frac{2}{3}$

4.  $\frac{5}{8} - \frac{1}{3}$

5.  $2 - \frac{3}{7}$

6.  $5 + \frac{5}{8}$

7.  $\frac{7}{4} + \frac{2}{3} + \frac{5}{6}$

8.  $\frac{7}{9} - \left(\frac{1}{3} + \frac{2}{5}\right)$

9.  $\frac{2}{5} \times \frac{1}{3}$

10.  $\frac{7}{3} \times \frac{41}{82}$

11.  $4 \times \frac{6}{5}$

12.  $\frac{5}{7} \div \frac{2}{3}$

13.  $\frac{3}{8} \div \frac{15}{32}$

14.  $\frac{3}{\frac{5}{6}}$

B. Simplify.

1.  $6x + 11y - 4x + y$

2.  $5x^2 - 2xy - 7x^2 - xy$

3.  $5(3x - 2) - (6 - 4x)$

4.  $(x - 4)^2$

C. Solve the equations.

1.  $3x + 5 = 2x + 11$

2.  $x - 18 = 6x + 7$

3.  $-2x + 10 = -x$

4.  $7(2 - x) = 5x$

5.  $\frac{2}{3}(x + 4) - 8 = \frac{11}{3}$

6.  $5(3a - 2) = 2(6a - 8)$

7.  $\frac{1}{3}(x + 8) = 10 - 2(x - 1)$

8.  $\frac{x}{27} = \frac{4}{9}$

9.  $\frac{6}{5m} = \frac{6}{25}$

10.  $\frac{3}{x - 6} = \frac{1}{x}$

D. Find the slope of the line that contains the points.

1.  $(12, 8)$  and  $(0, -4)$

2.  $(11, 1)$  and  $(-11, 1)$

3.  $(-1, 7)$  and  $(-3, 18)$

4.  $(-2, 4)$  and  $(-2, 8)$

E. Find the slope of the line given the equation and sketch the graph of the line.

1.  $y = 3x + 4$

2.  $y = -x - 1$

3.  $2x + y = 5$

4.  $3x - 4y = 8$

F. Write an equation of the line with the given slope and y-intercept.

1.  $m = 5$       y-intercept is 8

2.  $m = -\frac{3}{4}$       y-intercept is  $-1$

G. Write an equation of the line that passes through the given point with the given slope.

1.  $(-3, 2)$        $m = 4$

2.  $(2, 6)$        $m = -\frac{1}{2}$

3.  $(-8, -1)$        $m = 0$

H. Write an equation of the line that passes through the given points.

1.  $(-3, -7)$  and  $(0, 8)$

2.  $(-4, -3)$  and  $(-3, -3)$

3.  $(-1, -2)$  and  $(5, 0)$

I. Simplify

1.  $\sqrt{40}$

2.  $5\sqrt{27}$

3.  $\frac{1}{2}\sqrt{200}$

4.  $\sqrt{50} - \sqrt{18}$

5.  $\sqrt{28} + \sqrt{63}$

6.  $(3\sqrt{6})(2\sqrt{2})$

7.  $(3\sqrt{2})^2$

8.  $(\sqrt{21})(\sqrt{24})$

9.  $\frac{1}{\sqrt{2}}$

10.  $\frac{2\sqrt{3}}{\sqrt{5}}$

J. Solve the equations. There are two answers.

1.  $x^2 = 4$

2.  $x^2 + 3 = 13$

3.  $2x^2 + 5 = 23$

4.  $x^2 + 3^2 = 5^2$

5.  $x^2 - 7x + 12 = 0$

6.  $x^2 - 2x = 24$

7.  $x^2 - 81 = 0$

8.  $3x^2 - 75 = 0$

K. Solve these systems of equations.

1.  $x + y = 5$   
 $x - y = 1$

2.  $x + 3y = 4$   
 $2x - 5y = -3$