



## Required Math Summer Review Homework

### Algebra 2, Standard and Essentials

Please complete the problems below and bring them with you the first day of class.

1) Operations with Fractions

Perform the given operation. Simplify:

a)  $\frac{1}{7} + \frac{3}{7} =$

b)  $\frac{2}{3} + \frac{3}{5} =$

c)  $\frac{4}{5} \times \frac{2}{9} =$

d)  $\frac{8}{9} \times \frac{3}{4} =$

e)  $\frac{11}{12} - \frac{5}{12} =$

f)  $\frac{7}{8} - \frac{1}{3} =$

g)  $\frac{2}{3} \div \frac{1}{5} =$

h)  $\frac{7}{12} \div \frac{3}{4} =$

2) Operations with Signed Numbers

Perform these computations:

a)  $-8 + (-9) =$

b)  $4 + (-10) =$

c)  $-2 - 5 =$

d)  $-3 - (-4) =$

e)  $(-3)(-6) =$

f)  $12(-1) =$

g)  $\frac{-15}{-3} =$

h)  $(-2)(-3)(7)(-1) =$

3) Absolute Value

Evaluate each of the following.

a)  $|6| =$

b)  $|-7| =$

c)  $|-2| + |-5| =$

4) Order of Operations

Simplify each of the following:

a)  $3 + 5^2 =$

b)  $-2 + 3(4 - 1) =$

c)  $2(8 - 5)^2 - |4 + 2(-3)| =$

5) Distributive Property

Multiply each of the following:

a)  $4(3x - 5) =$

b)  $-2a(3a + 7b) =$

c)  $(4x + 3)(x + 5) =$

d)  $(3x - 7y)(2x - 3y) =$

Factor completely:

e)  $3x + 3y =$

f)  $4a^3 - 3a^2 - 5a =$

g)  $25m^3 - 10m^2 + 5m =$

6) Evaluating Expressions

If  $a = 5$ ,  $b = -3$  and  $c = -2$ , evaluate the following:

a)  $a + 4c - b$

b)  $-(a)^2$

c)  $b^2 - 4ac$

7) Combining Like Terms

Simplify:

a)  $3b + 4a - 7b + a$

b)  $5a^2 - 3a + 2(6a - a^2)$

c)  $15a - (3a - 4b) + 9(a - 2b)$

8) Solving Linear Equations and Inequalities

Solve the equation. Check your answer.

a)  $\frac{3x+2}{5} = 7$

b)  $5(x-6) = 9x-3$

c)  $\frac{1}{2}x + \frac{3}{4} = \frac{2}{3}x$

Solve the given inequality. Graph your solution on a number line.

d)  $7x - 3 \geq 11$

e)  $-2(3x-1) + 2x < 10$

9) Literal Equations

Solve for the requested variable.

a) for b:  $3(a + b) = c$

b) for h:  $V = \frac{1}{3}Bh$

c) for w:  $P = 2l + 2w$

10) The Coordinate Plane

Plot the following points. State in which quadrant or on which axis the point is found.

a)  $(-6,1)$

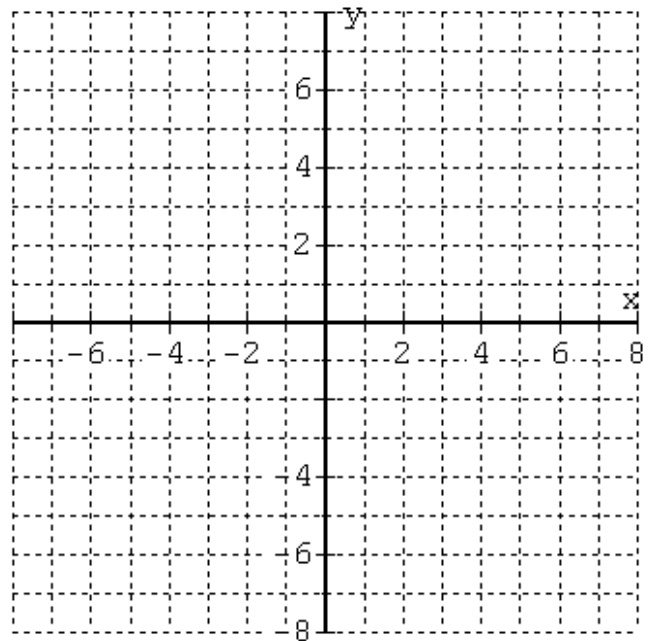
b)  $(-3,-2)$

c)  $(0,-1)$

d)  $(2,5)$

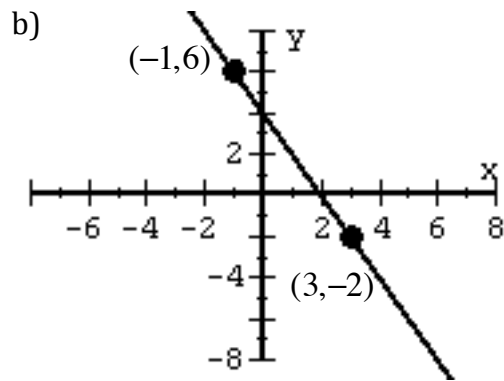
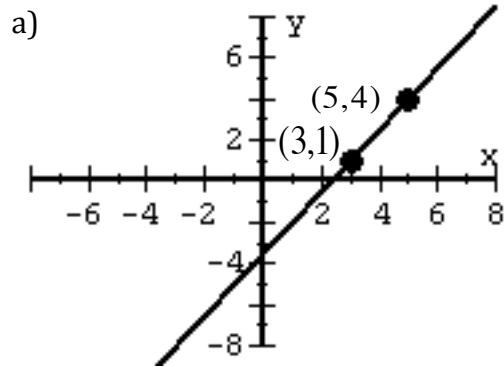
e)  $(3,0)$

f)  $(2,-4)$



11) Slope

Find the slope of the line containing the given points.



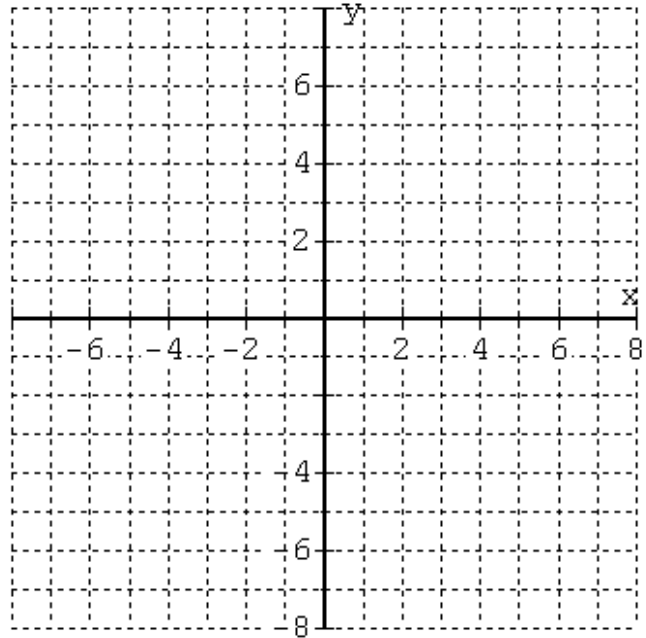
c)  $(-4, 5)$  and  $(3, 5)$

d)  $(2, 6)$  and  $(2, -3)$

12) Linear Graphing

Graph the given linear equations by plotting points, using slope – intercept or by finding the x and y-intercepts.

a)  $y = 2x + 3$



b)  $2x + 3y = 6$

