

## EXIT EXAM HOMEWORK 2

Name \_\_\_\_\_

### A. To solve equations “**Get rid of...**”

1. Parentheses by using the distributive property.
2. Denominators: Multiply each side of equation by common denominator.  
Decimals: Multiply each side of equation by 10, 100, 1000, etc.
3. Like terms on the same side by combining  
Goal: The equation should be no more complicated than:  $4x - 8 = -7x + 9$
4. Signs (addition or subtraction) by using the addition principle (**add opposites**).  
Get variable terms on one side of the equation and all constant terms on the other side.  
Goal: The equation should be no more complicated than:  $4x = -9$
5. Coefficients by dividing **by coefficient (BY SAME NUMBER)**. Goal:  $x = \text{number}$

Solve.

1.  $-13x = 8$

2.  $2x + 6 = x - 20$

3.  $4x + 3x = 2x - 8x + 5$

4.  $\frac{3}{5}x = 6$

5.  $\frac{3}{4}x - 1 = \frac{-5}{3}$

6.  $2(x - 4) = 6$

7.  $2 - (x + 1) = 4(3 - 2x) + 9$

8.  $\frac{2}{3}x - \frac{5}{2} = -4$

### B. Formulas

Substitute the value(s) given and solve the resulting equation.

1. Use  $d = rt$  to find  $t$  when  $d = 350$  and  $r = 50$ .

2. Use  $F = \frac{9}{5}C + 32$  to find  $C$  when  $F = 23^0$ .

**C. Solving Literal Equations.**

Solve literal equations using the linear equation process.

1. Solve  $s = p - d$  for  $p$

2. Solve  $E = IR$  for  $R$

3. Solve  $3x + 5y = 7$  for  $y$

4. Solve  $R = \frac{C - S}{t}$  for  $C$

**D. Solving Inequalities** – Remember to change the direction of the inequality when multiplying or dividing by any negative number.

Solve.

1.  $\frac{1}{5}x < \frac{2}{3}$

2.  $5x + 7 \geq 2$

3.  $4 - 2x < 10$

4.  $3(x - 2) \geq 9(x + 2)$

**E. Translating From English to Algebra**

Set up the following. Do not solve.

1. Ten more than four times a number yields two-thirds of the number.

2. Twelve less than 5 times a number is the same as the number increased by 4.

3. Three times the sum of a number and ten is equivalent to the quotient of the number and two.

4. The sum of three consecutive odd integers is 159.

Set up and solve.

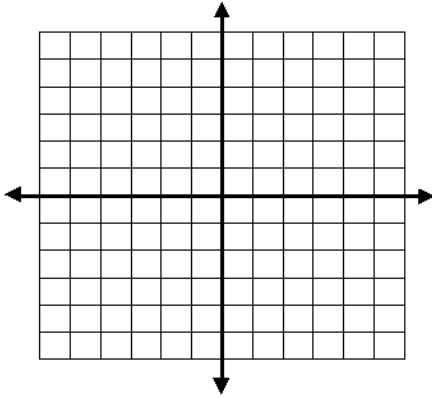
5. Find three consecutive integers such that the sum of the first and the last is three times the middle one.
  
  
  
  
  
  
  
  
  
  
6. If the length of a rectangle is 4 more than 5 times the width, and the perimeter is 32 meters, what is the width?
  
  
  
  
  
  
  
  
  
  
7. The second angle of a triangle is  $10^\circ$  more than the first. The third angle is 15 times as large as the first. Find the measure of the second angle.

#### F. Solving Direct and Inverse Variation Problems

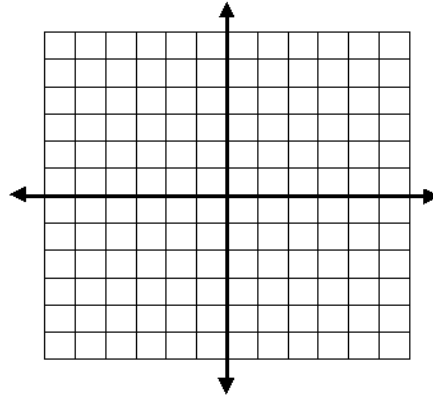
- (1) Write the two words that have numbers associated with them.
  - (2) Under these two words write two fractions  
Be careful to put the numbers of one relationship in the numerator and the numbers from the second relationship in the denominators.
  - (3) a. direct variation (one quantity increases as the other quantity increases or one quantity decreases as the other decreases)  
--- set the two fractions equal to each other  
b. inverse variation (one quantity increases as the other quantity decreases, or vice versa)  
--- set one fraction equal to the reciprocal of the other fraction.
  - (4) Cross multiply and solve. Remember on some multiple choice questions to look for the answer with the same cross product.
1. It takes 6 hr for 8 programmers to complete a certain job. How long will it take 12 programmers to complete the job?
  
  
  
  
  
  
  
  
  
  
  2. The distance,  $d$ , that a free-falling body falls varies directly as the square of the time,  $t$ , that it falls. If an object falls 36 meters in 3 seconds, then how far will it fall in 2 seconds?
  
  
  
  
  
  
  
  
  
  
  3. A 20-acre field produces 300 bushels of wheat. Let  $W$  represent the number of bushels produced by a 50-acre field at the same rate. Select the correct statement of the given condition.  
a.  $\frac{20}{300} = \frac{50}{W}$       b.  $\frac{20}{W} = \frac{50}{300}$       c.  $\frac{20}{300} = \frac{W}{50}$       d.  $\frac{20}{50} = \frac{W}{300}$

## G. Graphing Linear Equations

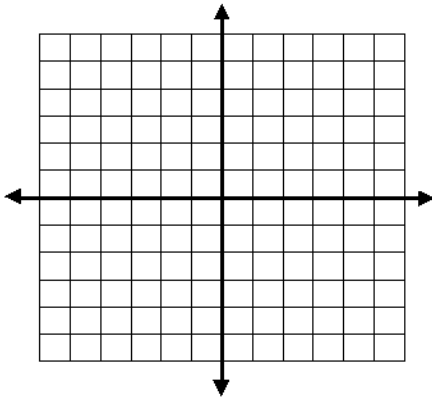
1.  $2x + 3y = 9$



2.  $4x - y = 1$

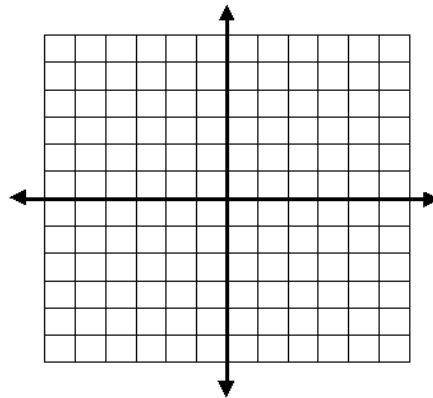


3.  $y = -\frac{2}{3}x$



4.  $y = 5$

5.  $x = -2$



6. Find the slope of the line passing through the given points.  
a.  $(2, -3)$  and  $(-1, 4)$       b.  $(3, 2)$  and  $(3, 7)$

7. Find the x and y intercepts for  $3x - 2y = 9$

8. Find the x intercept for  $x + 6y = 2$   
a.  $(0, \frac{1}{3})$       b.  $(\frac{1}{3}, 0)$       c.  $(0, 2)$       d.  $(2, 0)$

## H. Rational Expressions

1.  $\frac{x+3}{x+3} =$

2.  $\frac{x-3}{x-3} =$

3.  $\frac{x-3}{3-x} =$

4.  $\frac{x-3}{x+3} =$

$$5. \frac{x^2 - 2x}{2 - x} =$$

$$6. \frac{x^2 - 9}{x^2} \div \frac{x^2 + x - 12}{x^2 - 3x} =$$

$$7. \frac{5}{2x} + \frac{7}{2x} =$$

$$8. \frac{3x+5}{x^2+2x-8} - \frac{2x+7}{x^2+2x-8} =$$

## I. Radical Expressions

$$1. \sqrt{24x^5}$$

$$2. \sqrt{18} - \sqrt{12}$$

$$3. 2\sqrt{45x} + \sqrt{20x}$$

$$4. \sqrt{\frac{7}{5}}$$

$$5. (5 + \sqrt{7})^2$$

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

## Answers to Review for Final HOMEWORK 2

$$\mathbf{A1.} \quad -\frac{8}{13}$$

$$2. \quad -26$$

$$3. \quad \frac{5}{13}$$

$$4. \quad 10$$

$$5. \quad -\frac{8}{9}$$

$$6. \quad 7$$

$$7. \quad \frac{20}{7}$$

$$8. \quad -\frac{9}{4}$$

$$\mathbf{B1.} \quad 7$$

$$2. \quad -5$$

$$\mathbf{C1.} \quad p=s+d \quad 2. \quad R = \frac{E}{I}$$

$$3. \quad y = -\frac{3}{5}x + \frac{7}{5}$$

$$4. \quad C=Rt+S$$

$$\mathbf{D1.} \quad x < \frac{10}{3} \quad 2. \quad x \geq -1$$

$$3. \quad x > -3$$

$$4. \quad x \leq -4$$

$$\mathbf{E1.} \quad 4n+10 = \frac{2}{3n}$$

$$2. \quad 5n-12=n+4$$

$$3. \quad 3\left(\frac{1}{2} + 10\right) = \frac{n}{2}$$

$$4. \quad n+n+2+n+4=159$$

$$5. \quad -1, 0, 1$$

$$6. \quad 2$$

$$7. \quad 20$$

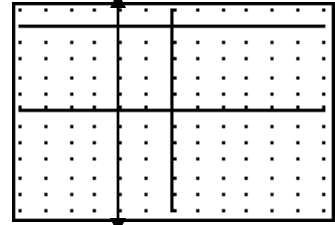
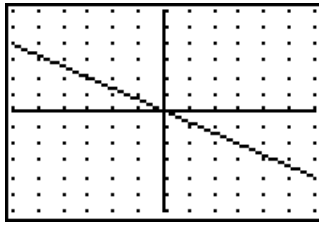
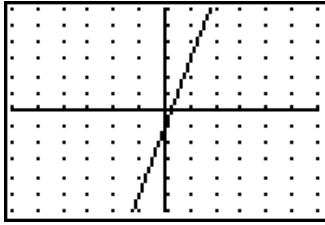
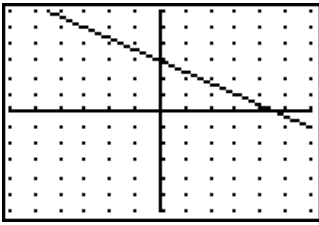
- F1. 4hours      2. 16 meters      3. a

G1.

2.

3.

4. and 5.



- 6a.  $-\frac{7}{3}$       b. undefined      7. x intercept (3,0) and y intercept  $(0, -\frac{9}{2})$       8. d

- H1. 1      2. 1      3. -1      4. will not simplify

5.  $-x$       6.  $\frac{(x-3)(x+3)}{x(x+4)}$       7.  $\frac{6}{x}$       8.  $\frac{1}{x+4}$

- I1.  $2x^2\sqrt{6x}$       2.  $3\sqrt{2}-2\sqrt{3}$       3.  $8\sqrt{5x}$

4.  $\frac{\sqrt{35}}{5}$       5.  $10+2\sqrt{7}$       6.  $2-2\sqrt{3}$