



SEMESTER 1 FINALS: UNIT 1 REVIEW

1. Classify the following numbers according to the number sets they belong to.

Number	Counting/Natural	Whole	Integer	Rational	Irrational
0		X	X	X	
$-\frac{5}{11}$				X	
-35			X	X	
$\sqrt{13}$					X



2. Simplify the following using the order of operations (PEMDAS):

a.  $14 \div 2 + 5 \times 4$

$$7 + 5 \times 4$$

$$7 + 20$$

$$(27)$$

b.  $5[(18 \div 6) - 4]$

$$5[(3) - 4]$$

$$5(-1)$$

$$(-5)$$

c.  $\frac{5 \times 10 + 2}{4 - 12 \div 6} = \frac{50 + 2}{4 - 2} = \frac{52}{2} = (26)$

d.  $48 \div 8 + 3 \times 2^2$

$$6 + 3 \times 4$$

$$6 + 12 = (18)$$



3. Solve for x. Check your answers!

a.  $2(x-3) = 8$

$$2x - 6 = 8$$

$$2x = 14$$

$$(x = 7)$$

b.  $3(x+5) = 19 + 3x - 4$

$$\begin{array}{r} 3x + 15 = 15 + 3x - 4 \\ -3x \qquad -3x \\ \hline 15 = 15 \end{array} (R)$$

c.  $\frac{x}{-3} - 6 = 18$

$$-3 \cdot \frac{x}{-3} = 24 \cdot -3$$

$$(x = -72)$$

d.  $5x - 6x + 10 = -x + 10$

$$\begin{array}{r} -x + 10 = -x + 10 \\ +x \qquad +x \\ \hline 10 = 10 \end{array} (R)$$

$$e. \frac{2x}{-2} = 22 \cdot -2$$

$$x = -44$$

$$f. \frac{3}{4}x - 1 = 2$$

$$\frac{4}{3} \cdot \frac{3}{4}x = \frac{3 \cdot 4}{3}$$

$$x = 4$$



4. Solve the proportion.

$$a. \frac{3m}{20} = \frac{3}{10}$$

$$3m = 6 \quad \text{OR} \quad 30m = 60$$

$$m = 2 \quad \quad \quad m = 2$$

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

$$8x = 4(x-3)$$

$$8x = 4x - 12$$

$$4x = -12$$

$$x = -3$$



5. What number is 45% of 92?

$$\frac{x}{92} = \frac{45}{100}$$

$$100x = 4140$$

$$x = 41.4$$

6. What percent of 25 is 17?

$$\frac{17}{25} = \frac{x}{100}$$

$$x = 68$$

7. 52 is 15% of what number?

$$\frac{52}{x} = \frac{15}{100}$$

$$15x = 5200$$

$$x = 346.67$$

8. You go out to mini golf with a big group of friends, and the total bill is \$75. You have a coupon to save 10%. How much money do you save on your total?

$$75 \times .1 = \$7.50 \text{ savings}$$

you pay \$67.50



9. Solve for y:

$$a. 6x = 3y - 4$$

$$\frac{6x}{3} + \frac{4}{3} = \frac{3y}{3}$$

$$y = 2x + \frac{4}{3}$$

$$b. -5x + 10y = 12$$

$$\frac{10y}{10} = \frac{5x + 12}{10}$$

$$y = \frac{1}{2}x + \frac{6}{5}$$

