Midterm Additions ---- Introductory Algebra

1. State the properties of Real numbers being illustrated.
	1. 5 + ( -5) = 0 \_\_\_\_\_ b. ( -7) + 0 = ( - 7) \_\_\_\_\_\_\_\_\_\_\_

c. $6\*7\* \frac{1}{3} = 6\* \frac{1}{3}\*7 $ \_\_\_\_\_\_\_ d. $\frac{2}{7}$ is equivalent to $\frac{2}{ 7 }\* \frac{9}{9 }$ \_\_\_\_\_\_\_\_\_\_

e. 3 + 4 + (-3) is equivalent to 3 + (-3) + 4 \_\_\_\_\_\_\_\_\_ f. $9\* \frac{1}{9}=1$ \_\_\_\_\_\_\_\_\_

g. (-7) \* 1 = (-7) \_\_\_\_\_\_\_\_ h. $\left(2∙ 4 \right)∙6 = 2 ∙\left( 4 ∙6 \right) \\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

i. $\frac{0}{17}$ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ j. $\left(2 ∙ 4 \right)∙6 = 6 ∙\left( 2 ∙4\right)$ \_\_\_\_\_\_\_\_\_

k. $\frac{17}{0} $ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ l. $\frac{5}{3}\* \frac{3}{5} =1$ \_\_\_\_\_\_\_\_\_\_

m. $3\*0=0$ \_\_\_\_\_\_\_\_\_\_\_\_ n. ( 8 + 6 ) + 4 = 8 + ( 6 + 4 ) \_\_\_\_\_\_\_\_\_\_

1. $\{ 6.8, -\frac{2}{7} , -4 , 0, - 4.020020002…, π, 5.123123… , 9 \}$

*List the numbers in the set that are:*

* 1. Natural numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. Integers \_\_\_\_\_\_\_\_\_\_\_ c. Irrational \_\_\_\_\_\_\_\_\_\_\_

d. Whole numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ e. Rational \_\_\_\_\_\_\_\_\_\_\_\_ f. Real numbers \_\_\_\_\_\_\_\_\_

1. Simplify the following (x ≠ $\frac{-1}{2}$ ) :
	1. $\frac{3\left(5x-2\right)-15x+6}{4( 6x+3 )}$ = b. $\frac{36( 5x+2)}{6x-2( x+2x )}$ = c. $\frac{ 5-4( 3-5)^{3}-( -6)}{[2( 8+(-2)^{3}+4 ]^{2}}$ =

Answers:

1a. additive inverse b. additive identity

 c. commutative for multiplication d. multiplicative identity

 e. commutative for addition f. multiplicative inverse / reciprocal

 g. multiplicative identity h. associative for multiplication

 i. 0 j. commutative property

 k. undefined l. multiplicative inverse / reciprocal

m. zero property n. associative for addition

2a. { 9} b. { -4, 0, 9 } c. { -4.020020002… , π }

 d. { 0, 9 } e. { 6.8, $\frac{-2}{ 7}$ , -4, 0 , 5.123123… , 9 } f. all

3a. 0, if x ≠ $\frac{-1}{ 2}$ b. undefined c. $\frac{43}{16}$