Name: _____   Date: _____

Unit 2 Study Guide: Operations with Rational Numbers

1. Order the numbers from least to greatest, then place on a number line:
   $-13.5, 16, 3.21, -20, ½, -3\frac{2}{4}, 15, -2.25, -14$

$$\textbf{-20, -14, -13.5, -3}\frac{2}{4}\textbf{, } -2.25, \frac{1}{2}, 3.21, 15, 16$$

2. Find these sums and differences.

a) $3.2 - (-1.7) =$

$$3.2$$
$$+ 1.7$$
$$\overline{4.9}$$

b) $-14 - (-15)$

$$15$$
$$-14$$
$$\overline{1}$$

c) $1.75 + (-.50)=$

$$-0.50$$
$$\overline{1.25}$$

d) $-6 + (-2.5) =$

$$-6.0$$
$$-2.5$$
$$\overline{-8.5}$$

e) $-13 + 7$

$$-6$$

f) $2.2 + (-16) + (-8)=$

$$-16 + -8 = -24$$
$$24.0$$
$$\underline{2.2}$$
$$-21.8$$

g) $\frac{3}{4} + \frac{7}{3}$

$$3\frac{1}{12}$$

h) $-\frac{6}{7} - \frac{4}{5}$

$$-1\frac{23}{35}$$

i) $\frac{4}{3} + \left(-\frac{1}{2}\right) - \frac{3}{4}$

$$\frac{1}{12}$$

j) $2\frac{5}{8} + 9$

$$11\frac{5}{8}$$

k) $-3\frac{4}{11} - 2$

$$-5\frac{4}{11}$$

l) $9\frac{1}{2} + \left(-\frac{2}{3}\right) - \frac{2}{4}$

$$8\frac{1}{3}$$

3. Mary's credit card statement showed that she owed $400. She made a payment of $320.50, and then she charged $29.75 for gasoline. She returned a pair of boots for $46.20 and then charged $14.80 for lunch. What is her new balance on her Credit Card?

-400 + 320.50 + -29.75 + 46.20 + 14.8 = **-48.25**

4. Glen brought $38 with him on a family vacation. He spent $\frac{4}{7}$ of his money on presents for his friends. How much money did Glen spend buying presents for his friends?

$\frac{38}{1}$ x $\frac{4}{7}$ = $\frac{152}{7}$ = **$21 $\frac{5}{7}$**

5. Simplify the following expressions.

a. $1.3(-7)$

   -9.1

b. $(-20) \div .4$

   -50

c $1.27 \div (-.3) =$

   -4.23

d. $\frac{-36}{-12} =$ **3**

e. $.36 \div 1.8 =$ **0.2**

f. $\frac{2}{3} \cdot \left(-\frac{5}{7}\right) =$ **-$\frac{10}{21}$**

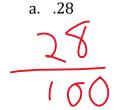g. $3\frac{5}{12} \cdot \left(-\frac{3}{7}\right) =$

$\frac{41}{12} \cdot \left(-\frac{3}{7}\right) = -\frac{123}{84} = -1\frac{39}{84} = \mathbf{-1\frac{13}{28}}$

h. $\frac{12}{25} \cdot (-.75) =$

$\frac{12}{25} \cdot -\frac{3}{4} = -\frac{36}{100} = \mathbf{-\frac{9}{25}}$

6. Covert these decimals to fractions (don't simplify – save your energy)

For letter **a** (0.28) has decimals in the HUNDREDTHS PLACE. Put 28 OVER 100.

a. .28

$$\frac{28}{100}$$

b. 1.4

$$1\frac{4}{10}$$

For letter **B** (1.4) only has a decimal in the **tenths** PLACE. Put 4 OVER 10.

7. Convert these fractions to decimals

a. $\frac{5}{8}$

0.625

b. $\frac{7}{8}$

0.875

8. Choose the symbol that makes the following number statements true: < > =

a. -4.5 **<** 4.5

b. $\frac{4}{8}$ **=** $\frac{1}{2}$

c. 2.70 **>** $\frac{60}{25} = 2.4$

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