Algebra AB Chapter 1 Review

Name ___Okey doke___

Part I: Vocabulary

1. The **sum** of two numbers is the answer you get when you add.

   Circle all of the sums of 3. List four sets of numbers that have a sum of 3.

   ex) $-2 + 5 = 3$

   $0 + 3 = 3$

   $1 + 2 = 3$

   $4 + -1 = 3$

   Addition Table

2. The **product** of two numbers is the answer you get when you multiply.

   Circle all of the products of 10. List four sets of numbers that have a product of 10.

   ex) $2 \cdot 5 = 10$

   $-2 \cdot -5 = 10$

   $1 \cdot 10 = 10$

   $-10 \cdot -1 = 10$

   Multiplication Table

3. The **Distributive Property** states "Multiplying a number by a sum is the same as multiplying the number by each term in the sum and then adding the results." An example is 4 x (50 + 3) = 4 x 50 + 4 x 3.

   Use the distributive property to find the products:

   a. 98 x 5

   $5(90 + 8)$

   $5 \cdot 90 + 5 \cdot 8$

   $450 + 40 = \boxed{490}$

   b. $495 x 7

   $7(500 - 5)$

   $7 \cdot 500 - 7 \cdot 5$

   $3500 - 35$

   $\boxed{\$3465}$

4. Two fractions are **equivalent fractions** when they refer to the same location on the number line.

   Write an equivalent fraction for $\frac{3}{4}$ that has a denominator of 20.

   $$\frac{3}{4} \overset{\cdot 5}{\underset{\cdot 5}{=}} \frac{15}{20}$$

5. For the number 5, give the:

   a. **reciprocal** $\frac{1}{5}$

   b. **opposite** -5

Part II: Why does it work? What is the shortcut?

Problem and Shortcut/Work	Explanation of Work
6. $\frac{15}{17} \cdot \frac{17}{4} \cdot \frac{4}{23}$ $\boxed{\dfrac{15}{23}}$	In a multiplication problem, when a value appears in both the numerator & denominator, they divide out or "cross-reduce" to 1.
7a. $((-4)) + \underline{17} + 52 + (-17) + (4)$ $\boxed{52}$ 7b. $\left(\dfrac{-3}{20} + \dfrac{3}{4}\right) + \left(\dfrac{3}{20} + \dfrac{1}{4}\right)$ $\dfrac{3}{4} + \dfrac{1}{4} = \dfrac{4}{4} = \boxed{1}$	The sum of two opposites is always zero.
8. Use the fact that **391 + 785 = 1176** to help you find the value of **390 + 786**. Give the answer without adding up the numbers. $\boxed{1176}$	I subtracted 1 from 391 but added 1 to 785. The net effect of this is 0, or no change in the sum.

Part III: Computation (non-calculator)

9. Find the product $15 \cdot \left(\dfrac{1}{5} + \dfrac{2}{3}\right)$. Show work.

1)
$$3\,\frac{\cancel{15} \cdot 1}{1\;\;5} + \frac{\cancel{15}}{1}\cdot\frac{2}{3}\;^5 \rightarrow 3 + 10 \rightarrow \boxed{13}$$

2) $15\left(\dfrac{1}{5}\cdot\dfrac{3}{3} + \dfrac{2}{3}\cdot\dfrac{5}{5}\right)$

$15\left(\dfrac{3}{15} + \dfrac{10}{15}\right)$

$\dfrac{15}{1}\left(\dfrac{13}{\cancel{15}}\right) = \boxed{13}$

10. Find the sum $\dfrac{2}{7} + \left(\dfrac{5}{13} + -\dfrac{2}{7}\right)$ Don't show work!

opposites

$$\dfrac{5}{13}$$

11. Perform the indicated operation.

   a) $-24 - 15$ $\quad$ -39

   b) $16 + (-30)$ $\quad$ -14

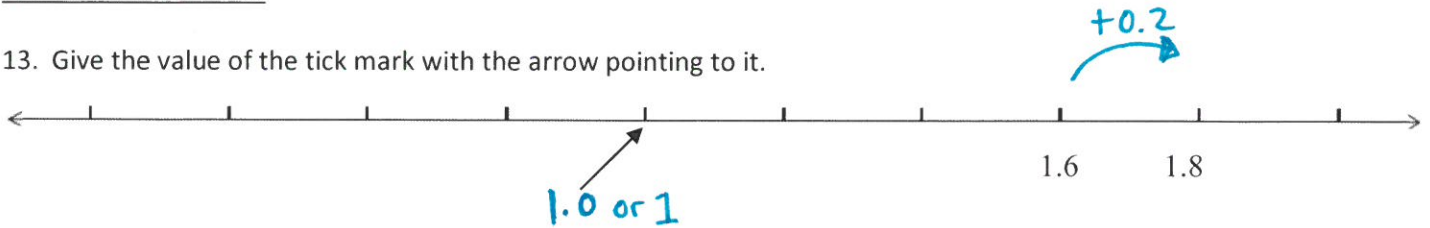   c) $-5 \cdot 11$ $\quad$ -55

12. Circle the larger number.

a) $\boxed{\dfrac{10}{21}}$ or $\dfrac{3}{7} = \dfrac{9}{21}$

b) $\boxed{2}$ or $\dfrac{10}{7}$
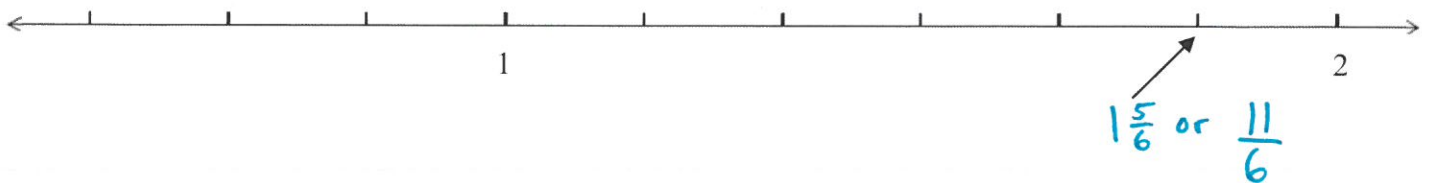
$\dfrac{14}{7}$ or $\dfrac{10}{7}$

c) $\boxed{5.401}$ or 5.4

Part IV: Number Lines

13. Give the value of the tick mark with the arrow pointing to it.

+0.2

1.6   1.8

1.0 or 1

14. Give the fractional value of the tick mark with the arrow pointing to it.

1   2

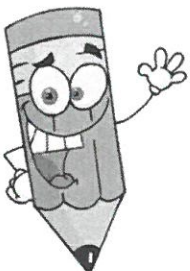$1\dfrac{5}{6}$ or $\dfrac{11}{6}$

15. Give two different numbers that are between 8.9 and 9. They do not need to be evenly spaced.

8.9   9

ex)   8.903   8.98

16. Point A is marked on the number line. Plot and label the points $-A$, $2A$, and $\dfrac{1}{A}$.

−A   0 $\dfrac{1}{A}$ 1   A   2A

A note about the test...

In this class we want you to learn how to look, notice, and make connections. Being able to do the problems on this review worksheet will certainly help you prepare for the test as some of the test problems will be very similar to these. Other problems will use the same thinking skills but may look unfamiliar. Do not worry – you have been working on making connections and should be able to figure them out ☺.

Thank you!