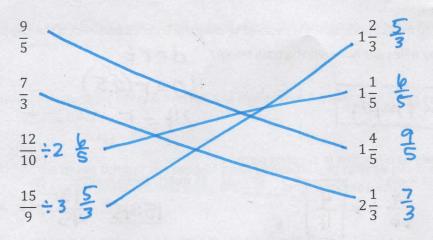Name __**Key**__   Date _____ Pd __

Quiz Review Fractions, Ratios, and Decimals

I.   Draw a line to match each improper fraction with its equivalent mixed number.

$\dfrac{9}{5}$ $1\dfrac{2}{3}$ $\dfrac{5}{3}$

$\dfrac{7}{3}$ $1\dfrac{1}{5}$ $\dfrac{6}{5}$

$\dfrac{12}{10} \div 2$ $\dfrac{6}{5}$ $1\dfrac{4}{5}$ $\dfrac{9}{5}$

$\dfrac{15}{9} \div 3$ $\dfrac{5}{3}$ $2\dfrac{1}{3}$ $\dfrac{7}{3}$

II.   Compare the fractions using the greater than (>), less than (<), or equal symbols (=).

1) $\dfrac{2}{3}$ __>__ $\dfrac{5}{9}$ 2) $\dfrac{3}{8}$ __<__ $\dfrac{8}{3}$ 3) $2\dfrac{1}{6}$ __<__ $\dfrac{14}{6}$

$0.667 \ge 0.556$ $0.375 \le 2.667$ $\dfrac{13}{6} \le \dfrac{14}{6}$

                                                         $2.167 \le 2.333$

III.   Perform the indicated operation: add, subtract, multiply, or divide. Then write your answers in simplest fraction form while showing all work to earn full credit.

1) $\dfrac{7}{8} + \dfrac{5}{8} = \dfrac{12}{8}$ 2) $\dfrac{6}{7} - \dfrac{4}{7} = \dfrac{2}{7}$

3) $\dfrac{1}{5} \times \dfrac{1}{2} = \dfrac{1 \cdot 1}{5 \cdot 2} = \boxed{\dfrac{1}{10}}$ 4) $\dfrac{3}{4} \div \dfrac{2}{5} = $ ___

                                             $\dfrac{3}{4} \cdot \dfrac{5}{2} = \dfrac{3 \cdot 5}{4 \cdot 2} = \boxed{\dfrac{15}{8}}$

5) $\dfrac{1}{9} + \dfrac{2}{3} = $ ___   6) $\dfrac{2}{3} \cdot \dfrac{3}{8} = \dfrac{2 \cdot 3}{3 \cdot 8} = \dfrac{6}{24} = \boxed{\dfrac{1}{4}}$

$\dfrac{1}{9} + \dfrac{6}{9} = \boxed{\dfrac{7}{9}}$

7) $\dfrac{8}{9} \div \dfrac{1}{3} = $ ___   8) $2\dfrac{3}{4} - \dfrac{5}{8} = $ ___

$\dfrac{8}{9} \cdot \dfrac{3}{1} = \dfrac{24}{9} \div 3 \boxed{\dfrac{8}{3}}$ $\dfrac{11}{4} - \dfrac{5}{8} = \dfrac{22}{8} - \dfrac{5}{8} = \boxed{\dfrac{17}{8}}$

9) $\dfrac{2}{7} \times 2\dfrac{1}{4} = $ ___   10) $1\dfrac{1}{4} + \dfrac{5}{12} = $ ___

$\dfrac{2}{7} \cdot \dfrac{9}{4} = \dfrac{2 \cdot 9}{7 \cdot 4} = \dfrac{18}{28} \div 2 \boxed{\dfrac{9}{14}}$ $\dfrac{5}{4} + \dfrac{5}{12} = \dfrac{15}{12} + \dfrac{5}{12} = \dfrac{20}{12} \div 4 \boxed{\dfrac{5}{3}}$

11) $\frac{7}{3} - \frac{2}{9} =$ _____

$\frac{21}{9} - \frac{2}{9} = \boxed{\frac{19}{9}}$

12) $8 \div \frac{5}{6} =$ _____

$\frac{8}{1} \cdot \frac{6}{5} = \frac{8 \cdot 6}{1 \cdot 5} = \boxed{\frac{48}{5}}$

12) Nikki's cousin lives 60 miles away, so Nikki decided to take the train to visit him. If the trip took $2\frac{1}{2}$ hours, how many miles per hour did the train travel?

$d = rt$
$60 = r(2.5)$
$24 = r$

$\boxed{24 \text{ mph}}$

IV.   *Express each ratio as a fraction in simplest form.*

1)   24 footballs to 66 footballs

24:66 $\frac{24}{66} \div 6 \boxed{\frac{4}{11}}$

2)   12 pounds to 28 points

12:28 $\frac{12}{28} \div 4 \boxed{\frac{3}{7}}$

3)   4 dimes to 44 dimes

4:44 $\frac{4}{44} \div 4 = \boxed{\frac{1}{11}}$

4)   8 inches to 16 inches

8:16 $\frac{8}{16} \div 8 \boxed{\frac{1}{2}}$

5)   15 quarts to 45 quarts

15:45 $\frac{15}{45} \div 15 = \boxed{\frac{1}{3}}$

6)   14 pennies to 22 pennies

14:22 $\frac{14}{22} \div 2 \boxed{\frac{7}{11}}$

7)   35 rainy days out of 63 days

35:63 $\frac{35}{63} \div 7 \boxed{\frac{5}{9}}$

8)   42 gallons to 54 gallons

42:54 $\frac{42}{54} \div 6 \boxed{\frac{7}{9}}$

V.   *Express each phrase as a rate and a unit rate. (Round your answer to the nearest hundredth.)*

	Rate	Unit Rate
1) 6 inches of snow in 5 hours	6:5	1.2in in 1 hr
2) 6 movie tickets cost $20.00	20:6	$3.33 for 1 ticket
3) 9 pencils for 10 dollars	10:9	$1.11 for 1 pencil
4) 9 batteries cost 22 dollars	22:9	$2.44 for 1 battery
5) Mowed 3 yards for $35.00	35:3	$11.67 per yard

Solve the ratio and rate word problems. Be sure to show work and include proper units.

1) For every 8 hotdogs sold at the malt shop there are 3 hamburgers sold. What is the ratio of hotdogs sold to hamburgers sold?   8:3 $\frac{8}{3}$

2) For every 5 PS3 games Carol owned she had 8 Wii games. What is her ratio of Wii games to PS 3 games?   8:5 $\frac{8}{5}$

3) At the store for every 6 movies sold there were 8 books sold. What is the ratio of books sold to movies sold?   8:6 $\frac{8}{6}$ OR   4:3 $\frac{4}{3}$

4) At the movie theater the ratio of small popcorns sold to large popcorns sold was 5:8. For every __5__ small popcorns sold there are __8__ large popcorns sold.

5) For every 6 onions on a burger there are 8 pickles. What is the ratio of pickles to onions?   8:6 $\frac{8}{6}$ OR   4:3 $\frac{4}{3}$

6) In a bag of candy the ratio of chocolate pieces to sugar pieces was 8:2. For every __2__ sugar pieces there are __8__ chocolate pieces.   1:4 $\frac{1}{4}$

7) The ratio of cars to the trucks in a parking lot was 3:2. For every __2__ trucks there were __3__ cars.

8) At the burger shop the ratio of regular sodas sold to diet sodas sold was 5:3. For every __5__ regular sodas sold there are __3__ diet sodas sold.

9) At the thrift store for every 3 long sleeve shirts there were 2 short sleeve shirts. What is the ratio of long sleeve shirts to short sleeve shirts?   3:2 $\frac{3}{2}$

10) In a neighborhood for every 2 old homes there were 8 new homes. What is the ratio of old homes to new homes?   2:8 $\frac{2}{8}$ or   1:4 $\frac{1}{4}$

11) The ratio of boys to girls on a softball team was 2:6. For every __6__ girls there are __2__ boys.   6:2   OR   3:1 $\frac{3}{1}$

12) At an orchard the ratio of green apples to red apples was 7:8. For every __8__ red apples there were __7__ green apples.

Formula $\dfrac{O-N}{O} \cdot 100$

Find each percent change in decimal form (round to the thousandth when necessary) and then to the nearest percent. State if it is an increase or decrease. Show all work for full credit.

1) From 362 m to 156 m *decrease*

$$57\%$$
$$\approx 56.906$$

2) From 139 minutes to 385 minutes *increase*

$$177\%$$
$$\approx 176.978$$

3) From \$328 to \$333 *increase*

$$2\%$$
$$\approx 1.524$$

4) From 259 hours to 274 hours *increase*

$$6\%$$
$$\approx 5.792$$

5) From 284 grams to 206 grams *decrease*

$$27\%$$
$$\approx 27.465$$

6) From \$246 to \$221 *decrease*

$$10\%$$
$$\approx 10.163$$

7) From 309 grams to 299 grams *decrease*

$$3\%$$
$$\approx 3.236$$

8) From 326 ft to 241 ft *decrease*

$$26\%$$
$$\approx 26.074$$

9) From 4048 minutes to 7548 minutes *increase*

$$86\%$$
$$\approx 86.463$$

10) From 2150 miles to 7895 miles *increase*

$$267\%$$
$$\approx 267.209$$

11) From 4359 ft to 5377 ft *increase*

$$23\%$$
$$\approx 23.354$$

12) From 5876 m to 6820 m *increase*

$$16\%$$
$$\approx 16.065$$

Fill in the missing parts of the table below. Write your answers in the boxes while converting fractions, decimals and percent.

	FRACTIONS		DECIMALS	PERCENT
1.	$\frac{1}{2}$		0.5	50%
2.	$\frac{6}{100} \div 2$	$\frac{3}{50}$	0.06	6%
3.		$\frac{8}{100}$	0.08	8%
4.	$\frac{16}{100} \div 4$	$\frac{4}{25}$	0.16	16%
5.	$\frac{61}{100}$		0.61	61%

Similar to calculating tips for meals, determining what your final cost of buying a shirt, pants, etc. is adding sales tax depending on where you are when you buy the item. Use sales tax rate and the original price to determine your sales tax and final bill.

1) Original price = $1,250 & sales tax rate = 6%

$$1250\,(0.06) = \underset{ST}{\$75} \qquad 1250 + 75 = \underset{TB}{\$1325}$$

2) Original price = $500 & sales tax rate = 2.5%

$$500\,(0.025) = \underset{ST}{\$12.50} \qquad 500 + 12.50 = \underset{TB}{\$512.50}$$

3) Original price = $469 & sales tax rate = 5%

$$469\,(0.05) = \underset{ST}{\$23.45} \qquad 469 + 23.45 = \underset{TB}{\$492.45}$$

4) Original price = $41,000 & sales tax rate = 9%

$$41,000\,(0.09) = \underset{ST}{\$3690} \qquad 41,000 + 3,690 = \underset{TB}{\$44,690}$$

5) A stapler cost $12 with a 1% sales tax rate.

$$12\,(0.01) = \underset{ST}{\$0.12} \qquad 12 + 0.12 = \underset{TB}{\$12.12}$$

6) A new television costs $105 with a sales tax rate of 7%.

$$105\,(0.07) = \underset{ST}{\$7.35} \qquad 105 + 7.35 = \underset{TB}{\$112.35}$$

7) What is the sales tax if the original price is $2,400 and the sales tax rate is 3.5%?

   a.) $84   b. $68   c. $63   d. $67

$$\cancel{2400\,(0.035)} \qquad 2400\,(0.035) = \$84$$