Unit 5 Review

Name:_____

Hour: 1 2 3 4 5 6 7

1. Paul sells 20 adult tickets and 30 student tickets for the school play. Write the **simplified ratio** of student tickets to adult tickets in three ways. **Also EXPLAIN what the ratio represents.**

$\frac{20}{30} = \frac{2}{3}$

Words	Colon	Fraction
2 to 3	2:3	$\frac{2}{3}$

"For every... 2 adult tickets sold, 3 student tickets sold."

2. Find the Unit Rate for the situation.

360 km in 9 hours

$\frac{360\text{ km}}{9\text{ hrs}} = \frac{40\text{ km}}{1\text{ hr}}$

3. Grace & Jim each bought notebooks for school. Grace got 6 notebooks for $4.80. Jim got 5 notebooks for $3.90. Jim says he got a better deal. **Explain** whether or not he is correct and how you know.

Grace $\frac{\$4.80}{6\text{ n.b.}}$ → $\frac{\$.80}{1\text{ nb}}$

Jim $\frac{\$3.90}{5\text{ n.b.}}$ → $\frac{\$.78}{1\text{ n.b.}}$

4. Determine what pairs of ratios CANNOT form a proportion.

Not a proportion

$\frac{3}{6} \times \frac{2}{4}$ → 12, 12

$\frac{4}{6} \times \frac{14}{21}$ → 84, 84

$\frac{10}{70} \times \frac{2}{7}$ → 140, 70

$\frac{2}{7} \times \frac{6}{21}$ → 42, 42

5. *This table contains equivalent ratios between x and y. Find the missing value

$\frac{8}{10} \xrightarrow{\times 2} \frac{x}{20}$

$x = 16$

x	y
4	5
8	10
	20
24	30

6. * Frankie bakes 45 cookies in 3 hours. At this rate, how many cookies will Frankie bake in 6 hours?

$\frac{45\text{ c.}}{3\text{ hr.}} = \frac{90\text{ c.}}{6\text{ hrs}}$

7.

* Alexander can make 18 cakes in 2 hours. → 9/1

Brianna can make 21 cakes in 3 hours. → 7/1

Caleb can make 28 cakes in 4 hours. → 7/1

Select **ALL** true statements.

(hint: find Unit Rates of each person)

A. Brianna & Caleb make cakes at the same rate.

B. Caleb makes cakes faster than Alex because 28 is more than 18

C. Brianna makes cakes faster than Alexander because 21 is more than 18

D. Alexander makes cakes faster than Caleb & Brianna.

E. Brianna makes cakes at a slower rate than Alex.

F. Caleb makes cakes slower than Alexander because his rate per hour is less than Alexander's rate per hour

8. The fuel for a chain saw is a mix of oil and gasoline. The label says to mix 6 ounces of oil with 20 gallons of gasoline. How much oil would you use if you had 60 gallons of gasoline?

$\frac{6\text{oz oil}}{20\text{ g. gas}} \xrightarrow{\times 3} \frac{18\text{ oz oil}}{60\text{ g. gas}}$

9. Find the value(?) that completes the proportion.

$\frac{8}{9} = \frac{?}{25}$

$\frac{9x}{9} = \frac{200}{9}$

$x = 22.2$

$9\overline{)200}$ → 22.2, 18, 20, 18, 20

10. *How many ounces of cherry juice concentrate are needed to mix with 12oz of water?

Ounces of Water	Ounces of Juice
4	2
8	4
12	
16	8

$\frac{8 \text{ w.}}{4 \text{ c.}} = \frac{12 \text{ w}}{x \text{ c.}}$

$\frac{48}{8} = \frac{8x}{8}$

$x = 6 \text{ oz}$

11. * Mr. Hicks draws a table showing a proportional relationship and asks students to find the missing value.

x	y
5 +5	10
6	
8 +5	13

What students correctly describe how to find the missing value?

Tabitha: add 6 + 5 = 11, because 5 + 5 = 10.

Lucy: multiply 6 × 2 = 12, because 5 × 2 = 10

Frank: divide 6 ÷ 2 = 3, because 5 ÷10 = 2

Max: subtract 10 – 6 = 4, because 10 – 5 = 5

12. Write 8% as a decimal and a fraction reduced to lowest terms.

8% → .08 (*decimal*)

$\frac{8}{100} = \frac{2}{25}$ (*fraction*)

13. Write 0.31 as a percent and fraction.

.31 → 31% (*percent*)

$\frac{31}{100}$ (*fraction*)

14. A baseball player got a hit 2 out of every 5 times he was at bat. Write $\frac{2}{5}$ as a percent.

$\frac{2}{5} \times 20 = \frac{40}{100}$

40%

15. Your family's dinner bill came to $55 with tax. If you wanted to leave a 15% tip how much should you leave for the tip?

$\frac{15}{100} = \frac{x}{55}$

$\frac{100x}{100} = \frac{825}{100}$

$x = \$8.25$ tip

16. A house you wish to buy costs $140,000. The bank requires a 20% down payment for a loan. How much money do you need for the down payment?

$\frac{20}{100} \times 1400 = \frac{x}{140{,}000} \times 1400$

$x = \$28{,}000$

17. Everyone in Science has a project. Of the 30 students 40% have completed their project. How many students **still need** to finish their project?

$\frac{40}{100} = \frac{x}{30}$

$\frac{100x}{100} = \frac{1200}{100}$

$x = 12$ completed

$30 - 12$

18 still need to finish

18. * Select **ALL** of the expressions that equal a correct method to calculate 42% of 200

A 42×200 → 8400

B 0.42×200 → 84.00

C $\frac{42}{100} \times 200$ → 84

D $\frac{0.42}{100} \times 200$ → .84

$\frac{42}{100} = \frac{x}{200}$ $x = 84$