Math 7 Practice Problems (1.1-1.3)

Ratios, Rates, Complex Fractions & Dimensional Analysis

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Name_	(K	ey)	
Block _			Date_	

No Calculator for # 1-8. You may use a calculator for # 9-16.

2) Simplify

$$\frac{3\frac{1}{2}}{14} = 3\frac{1}{2} + 14 = \frac{7}{2} + \frac{14}{4}$$

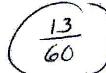
$$= \frac{7}{2} \cdot \frac{14}{4}$$



3) Write the word ratio and complex fraction that can be used to solve this problem. Then solve. In $3\frac{1}{4}$ hours, Sara runs 13 miles. Find her average rate of speed in miles per hour.

4) Write $21\frac{20}{3}$ % as a fraction in lowest terms.

$$\frac{213}{100} = 213 \div 100$$



5) Of the 24 students in math class, 15 are boys. What is the ratio of girls to boys? Give ratio in simplest form.

6) In $2\frac{1}{2}$ hours, Sara drove 170 miles. Find the unit rate in miles per hour.

$$\frac{girls}{boys} = \frac{9}{15} = \frac{3}{5}$$

miles
$$170 = 170 + 2\frac{1}{2}$$
 $= 170 + \frac{5}{2}$
 $= \frac{34}{10} \cdot \frac{2}{5}$
 $= \frac{34}{10} \cdot \frac{2}{5}$

- 7) Write these ratios in simplest form:
- A) 18 to 6 $\frac{18}{6}$ $(\frac{3}{1})$
- B) 12 to 20 $\frac{12}{20} \left(\frac{3}{5}\right)$
- C) 20 in 20 ik 3 if 9

8) Use this data from a survey of 100 students to decide if the statement is true of false.

If false show why it is false.

One out of five students go to sports practice as soon as they get home from school.

What do you do first when you get home from school?

Activity	Number of students	
Eat a snack	45	
Do homework	10	
Watch TV	20	
Go to sports practice	25	

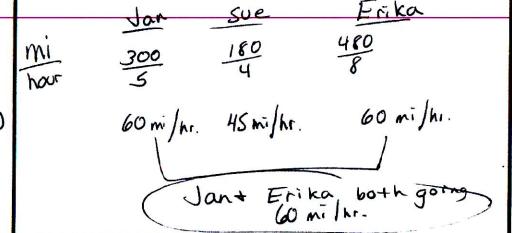
$$\frac{Sports}{total} \quad \frac{2S}{100} = \frac{1}{4}$$

$$1 \quad \text{out of } H$$

$$90 \quad \text{to sports}$$

9) A 24 oz bottle of Pam's shampoo costs \$3.69. A 38 oz bottle of Pam's shampoo cost \$4.59. Which is the better buy based on unit price?				
	2402	138 oz		
COST	3.69	4,59 80 80	Ha	
	15375 0.15/02	90.12/02)	

10) Jan drove 300 miles in 5 hours, Sue drove 180 miles in 4 hours, and Erika drove 480 miles in 8 hours. If they were all driving at constant speeds, which two girls were driving at the same rate? Explain (show) your reasoning using the concept of unit rate.



11) There are 36 jolly ranchers in a 24 ounce bag that costs \$2.88. Find the cost per jolly rancher.

12) A two pound bag of candy costs \$4.39. An eighteen ounce bag costs \$2.79. Find the <u>better buy based on unit price</u>.

B 0.14/02

13) Which of these trail mix recipes is more "chocolaty" (more chocolate per total ounces)? Explain your reasoning. Trail Mix A 12 oz cheerios 15 oz raisins 8 oz M&M's 12 oz M&M's	14) Use the process of dimensional analysis to change 3080 feet/min to feet per hour. 3080 ft 60 m/n fr
Chac 8 12 total 35 52	3080(60) 184,800 Ct/M
Targer	16) Use the process of dimensional analysis to convert 8 milliliters per minute to Liters per hour.
45 km. 1000m - 1 horn 5ec m 1 min 1 km 60 sec Sec	8 ml 1 L 60 ml hr
$\frac{45(1900)}{60} = \frac{45000}{60}$	8(60)
750 m/sec [km = 1000 m] 60 sec = 1 min]	$\frac{480}{1000}$ $1 L = 1000 mL$ $1 hr = 60 min$