Math 6 **Name** Key

Chapter 8 Review

Introduction to Ratio, Proportionality and Percent Applications

(8.1, 8.2, 8.3, 8.9 & 8.10)

The table tells how many 7th grade students at Cownie Middle School play each sport. Use the table to find each ratio. ***Write each ratio in three different ways.***

Sport	Number of Students
Baseball	12
Football	6
Soccer	10
Softball	2
Hockey	~~6~~

18, 12, 30

1. baseball players to softball players

$\frac{12}{2} = \frac{6}{1}$ 12:2 = 6:1 12 to 2 = 6 to 1

2. football players to soccer players

$\frac{6}{10} = \frac{3}{5}$ 6:10 = 3:5 6 to 10 = 3 to 5

3. hockey players to players of all other sports

$\frac{6}{30} = \frac{1}{5}$ 6:30 = 1:5 6 to 30 = 1:5

Find the following rates. Show your work.

4. Cownie Middle School sells packs of 12 pencils for $1.44. What is the cost per pencil?

$12\overline{)1.44}$ (.12, 12, 24)

$\frac{\$1.44}{12 \text{ pencils}} \div 12 = \frac{n}{1 \text{ pencil}}$ $\$0.12$ or $12¢$

5. At the Olberding Market one can buy a carton of 6 cheese sticks for $2.40 or a carton of 12 cheese sticks for $3.60. Which pack of cheese sticks is the better deal?

$\frac{\$2.40}{6 \text{ cs}} \div 6 = \frac{\$0.40}{1 \text{ cs}}$ $6\overline{)2.40}$ (.40, 24)

$\frac{\$3.60 \div 12}{12 \text{ cs} \div 12} = \frac{}{1 \text{ cs}}$ $12\overline{)3.60}$ (.30)

12 pack is better deal

Find the missing value in each proportion. Show your work.

6. $\frac{5}{8} = \frac{x}{40}$ $\cdot 5$ $\cdot 5$

25

7. $\frac{2}{5} = \frac{11}{n}$ $\frac{2n}{2} = \frac{55}{2}$

27.5

$2\overline{)55}$ 27.5, 4, 15, 14, 10

Error analysis.

8. Hailey says multiplication proves that $\frac{4}{5} = \frac{2}{10}$ is a proportion because $4 \cdot 5 = 20$ and $2 \cdot 10 = 20$. 40 ≠ 10 Cross Products

Do you agree with Hailey? NO Explain: Cross products should be used, $4 \cdot 10 \neq 2 \cdot 5$

Solve. Show your work.

9. To make 2 quarts of Kool Aid, Anna combines 32 grams of drink mix to 4 quarts of water. How much mix does she need to use if she wants to make 6 quarts of Kool Aid? not needed

$\frac{2 \text{ qts KA}}{32 \text{ g mix}} \cdot 3 = \frac{6 \text{ qts KA}}{n}$

9. 96 grams of mix

Conversion table.

Length	Weight	Time	Capacity
1 foot = 12 inches	1 pound = 16 ounces	1 minute = 60 seconds	1 cup = 8 fluid ounces
1 yard = 36 inches	1 ton = 2,000 pounds	1 hour = 60 minutes	1 pint = 2 cups
1 yard = 3 feet		1 day = 24 hours	1 quart = 2 pints
1 mile = 5,280 feet		1 week = 7 days	1 quart = 4 cups
1 mile = 1,760 yards		1 year = 365 days	1 gallon = 4 quarts
		1 leap year = 366 days	1 gallon = 16 cups

Find each missing value. You may use the table to find conversion rates. Show your work.

10. 192 hours = 8 days

$\frac{24\text{ hrs}}{1\text{ day}} \cdot 8 = \frac{n}{8\text{ days}}$ $\quad 24 \times 8 = 192$

11. 4.5 tons = 9,000 pounds

$\frac{2{,}000\text{ lbs}}{1\text{ ton}} \times 4.5 = \frac{n}{4.5\text{ tons}}$ $\quad 4.5 \times 2000 = 9000$

Compare. Write >, < or =. You may use the table to find conversion rates. Show your work.

12. 8 cups < 4 quarts

16 cups

$\frac{4\text{c}}{1\text{q}} \cdot 4 = \frac{n}{4\text{qts}}$

13. 10,000 feet < 2 miles

10,570 ft

$\frac{5{,}280\text{ ft}}{1\text{ mile}} \cdot 2 = \frac{n}{2\text{ miles}}$ $\quad 5{,}280 \times 2 = 10{,}570$

Multiple Choice: Circle the correct answer.

14. One event that runners compete in at the Christiancy High School State Track meet is the 400 yd dash. Which proportion could you solve to find the number of feet in the event?

A. $\frac{400\,yd}{x\,ft} = \frac{3\,yd}{1\,ft}$ No

B. $\frac{400\,yd}{x\,ft} = \frac{1\,yd}{3\,ft}$

C. $\frac{x\,ft}{400\,yd} = \frac{1\,yd}{3\,ft}$ No

$\frac{3\text{ ft}}{1\text{ yd}} = \frac{n}{400\text{ yd}}$

Solve. Show your work.

15. Find 40% of 88. 0.4 x 88

88
0.4
35.2

15. 35.2

16. Find 3% of 62. 0.03 x 62

62
x 0.03
1.86

16. 1.86

Solve. Show your work.

17. There are 24 students in Mrs. Olberding's 6th grade class. On Monday, 6 students were absent. What percent of the students were absent?

$\frac{6}{24}$ out of $= \frac{1}{4} =$

17. 25%

18. Mrs. Cownie's 24 students took a math test. If 25% of the students earned an A on the test, how many students earned an A?

$25\% = \frac{1}{4} \times \frac{24}{1} = 6$

18. 6 students earned an A

19. Anna wants to buy a sweater regularly priced at $29.95. It is on sale for 20% off the regular price. About how much will the cost of the sweater be after the discount?

(–)

80% will pay
0.8 x $29.95

19. $23.96

29.95
x 0.8
23.960