

Module 3: End of Module Review

Learning target: Understand rates and use rate language.

1. Use the tables below to answer a-d.

Catherine

Miles	3	6	9	12	15
Minutes	15	30	45	60	75

Josie

Miles	4	8	12	16	20
Minutes	24	48	72	96	120

- a. Find the missing values in the two tables above.
- b. Write how long it takes Catherine and Josie to travel as a rate.

Catherine: $\frac{30 \text{ min}}{6 \text{ miles}} = \frac{5 \text{ min}}{1 \text{ mile}}$

Josie: $\frac{24 \text{ min}}{4 \text{ miles}} = \frac{6 \text{ min}}{1 \text{ mile}}$

- c. Who travels at a faster pace? JUSTIFY your answer.

Catherine travels at a faster pace. I used unit rates to determine which one completed a mile in a shorter amount of time. Catherine completes a mile in 5 minutes and Josie takes 6 minutes to complete a mile.

- d. Catherine traveled $\frac{1}{5}$ miles/minute. Write an explanation, using ratio language, of what this rate means.

This rate represents the unit rate of $\frac{1}{5}$ miles per one minute or 1 mile to every 5 minutes.

Learning target: Solve unit rate problems involving constant speed and unit pricing.

2. Your family takes a trip to Lake Michigan. Your mom drives 3 hours at a constant speed of 55 miles per hour. How far did you and your family travel?

Start with the rate: $\frac{55 \text{ miles}}{1 \text{ hr}} = \frac{165 \text{ miles}}{3 \text{ hr}}$

3. Meijer is selling two brands of socks:

Brand A - 3 pair of socks for \$7.35

Brand B - 5 pair of socks for \$12.05

a. What are the rates that Brand A and Brand B are selling for?

Brand A: $\frac{\$7.35}{3 \text{ pairs}} = \frac{\$2.45}{1 \text{ pair}}$ Brand B: $\frac{\$12.05}{5 \text{ pairs}} = \frac{\$2.41}{1 \text{ pair}}$

b. Which brand is the better buy? JUSTIFY your answer.

Brand B is the better buy. I used unit pricing to determine the brand selling for the cheapest price per pair of socks. Brand B is \$0.04 cheaper per pair.

4. Tasha is training for a half marathon. Her goal is to train at a pace of 616 feet per minute.

Write her goal in miles per hour?

$\frac{616 \text{ feet}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} \cdot \frac{1 \text{ mile}}{5280 \text{ ft}} = \frac{36960 \text{ miles}}{5280 \text{ hr}} = \frac{7 \text{ miles}}{1 \text{ hr}}$

$\frac{616}{60} = 10.2666$
 $10.2666 \cdot 3600 = 36960$

5. Which rates are the same as \$16 to 2 hours?

- \$40 to 5 hours
- \$88 to 11 hours
- \$32 to 8 hours
- \$8 to 60 minutes 1 hr
- \$48 to 8 hours

\$	16	8	40	88	
hr	2	1	5	11	

$\frac{16}{2} = 8$

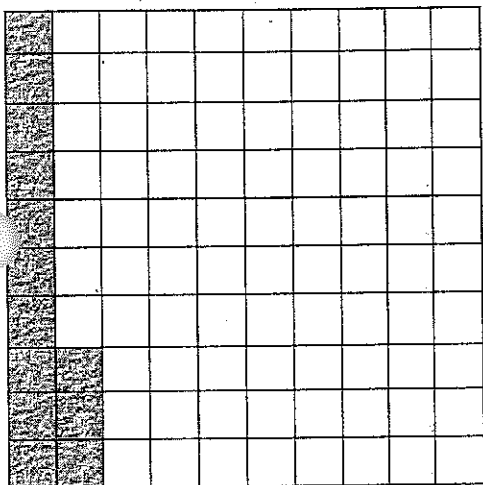
Learning target: Understand percent as a rate per 100.

6. Complete the following table:

D2P

RATIO	FRACTION	DECIMAL	PERCENT
3:4	$\frac{3}{4}$	0.75	75%
3:100	$\frac{3}{100}$	0.03	3%
45:100	$\frac{45}{100} = \frac{9}{20}$	0.45	45%
2:5	$\frac{2}{5}$	0.40	40%

7. What percent does the shaded portion of the following model represent?



$\frac{13}{100}$

13%

8. Explain how to find the percent of a fraction with a denominator of 5.

Percent is out of 100. If I have a fraction with a denominator of 5, I would need to find the equivalent fraction with a denominator of 100.

For example, $\frac{2}{5} = \frac{40}{100} = 40\%$

Learning target: Solve problems involving percent.

9. Katie likes to run. She ran 6 miles before school this morning. This is only 60% of the total miles she will run for the day. How many miles does she run in one day?

P	60	6	
W	100	10	

Katie runs 10 miles in one day.

10. Mason played a total of 25 video games on Friday. He won 22 of the games. What is Mason's win percentage?

P	22		88
W	25		100

88%

11. Complete the table:

ITEM	ORIGINAL PRICE	SALE PRICE	AMOUNT OF DISCOUNT	PERCENT SAVED	PERCENT PAID
Soccer ball	\$20	\$17	\$3	15%	85%
iPhone	\$400	\$360	\$40	10%	90%
Nike shoes	\$120	\$90	\$30	25%	75%

Soccer ball:

P	15		3
W	100		20

iPhone

P	10		40
W	100		400

Nike shoes

P	25		30
W	75		120