Name: _____ Date: _____ Period: _____

Unit 3 STUDY GUIDE

1.) Hailey has dollhouse that is built on a 1:12 scale. That means that one inch in her dollhouse represents 12 inches in a real house. Hailey's mom wants to make a bed for the dollhouse. If a real bed is 6 feet long, 4.5 feet wide and 2 feet tall, what should the dimensions of the dollhouse bed be? 1" = 1'

6" x 4.5" x 2"

2.) Jack's car used 14 gallons of gasoline to go 280 miles. At that rate, how many gallons would be used to go 500 miles? Explain how you know.

$\div 20 \; \frac{14 \text{ gal}}{280 \text{ mi}} = \frac{x}{500 \text{ mi}} \; \div 20$ $\quad \frac{500}{20} = 25$ gallons

3.) As an archer, Tess has a shooting percentage of 75%. That means she hits the bulls eye 75% of the shots she attempts. If she attempts 400 shots this season, on about how many shots will she hit the bulls eye?

75% of 400 = $\frac{75}{100} \cdot \frac{4}{4} = \frac{300}{400}$ 300 shots

4.) Mr. Webb gave his waiter a $6 tip on a $40 bill. What percent tip did he give the waiter?

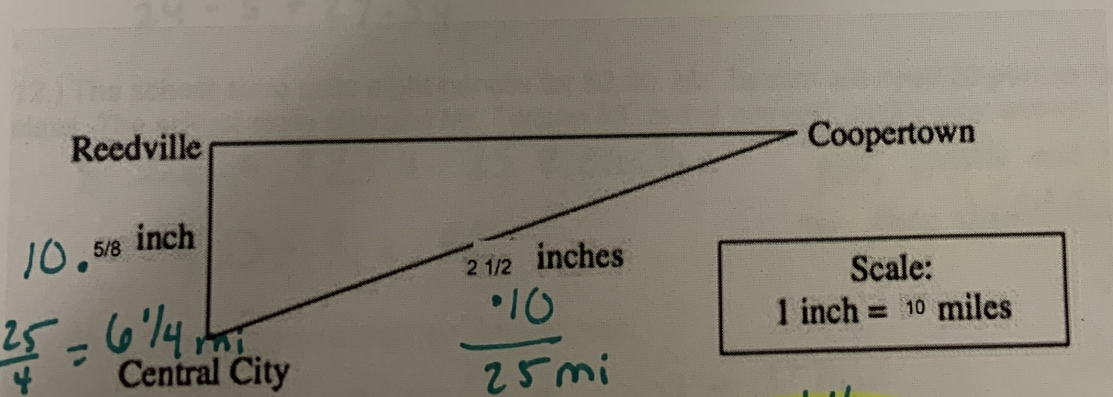
$\frac{6}{40} = \frac{3}{20} \cdot \frac{5}{5} = \frac{15}{100} =$ 15% tip

5.) At Spiney Torture Middle School, 40% of the classrooms are for sixth graders. If there are 10 sixth grade classes, how many classrooms are there total?

40%	10
÷4 → 10%	10/4 ÷4
×10 → 100%	×10
	$\frac{100}{4}$

25 classrooms

6.) Use the map shown to find the number of miles from Coopertown to Reedville by going through Central City.



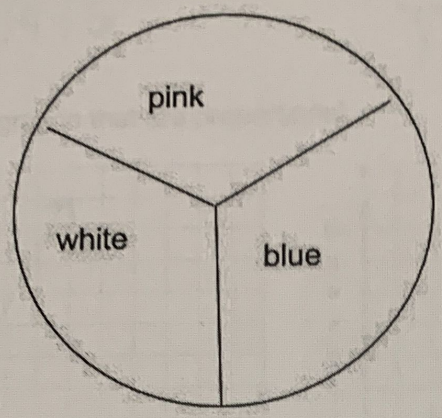
$\frac{50}{8} = \frac{25}{4} = 6\frac{1}{4}$ mi

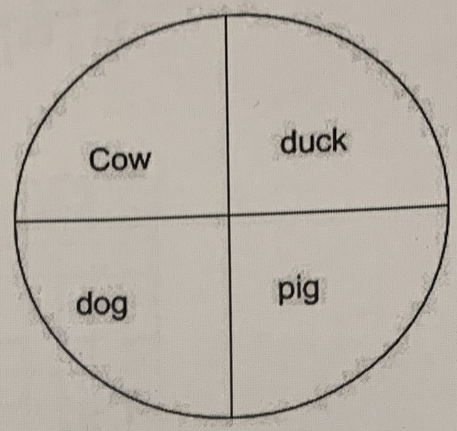
$\cdot 10$

25 mi

$6\frac{1}{4} + 25 = 31\frac{1}{4}$ mi

Use the spinners below to answer the questions 7 – 8.





7.) What is the probability of spinning a blue cow?

$\frac{1}{3} \cdot \frac{1}{4} = \frac{1}{12}$

8.) What is the probability of spinning a blue cow or a pink duck?

$\frac{1}{3} \cdot \frac{1}{4} + \frac{1}{3} \cdot \frac{1}{4} = \frac{1}{12} + \frac{1}{12} = \frac{2}{12} = \frac{1}{6}$

Simplify each statement fully.

9.) $50 - (2 + 9) \div 2 - 62 \div 2$

$50 - (11) \div 2 - 62 \div 2$

$50 - 5.5 - 31$

$44.5 - 31$

13.5

10.) $\dfrac{3 \cdot 2 - 5 \cdot 4}{-6 \div (-3) \cdot 2} = \dfrac{6 - 20}{2 \cdot 2} = \dfrac{-14}{4} = \dfrac{-7}{2}$

-3.5

11.) $6(4) - 5 + 9(6) \div 2(34 + 20)$

$24 - 5 + 9 \cdot 6 \div 2 \cdot 54$

$24 - 5 + 54 \div 2 \cdot 54$

$24 - 5 + 27 \cdot 54$

$24 - 5 + 1458$

1477

12.) The school store sells eight pencils for $2.00. Mr. Talcum will need 20 pencils for his new class. The school store charged Mr. Talcum $8. Is this correct? Justify your answer.

8 = \$2 = 25¢ each

$20 \cdot \frac{1}{4} = \$5$

No, pencils are norally 25¢ each, so they should charge him \$5, not \$8

13. Write three equations that are proportional.

$y = 2x$ $y = \frac{1}{2}x$ $y = 17x$

14. Create two tables that are proportional.

x	0	1	2	3
y	0	2	4	6

x	0	1	2	3
y	0	5	10	15

15. Draw two graphs that are proportional.