

Name: Answer Key

Date: _____

Chapter 3 PRACTICE Quiz 3D**45 Points**

Lessons 3.5 – 3.6

15 Questions (3 points per question)

For numbers 1-9, solve the proportion. Show your work!

1. $\frac{y}{6} \propto \frac{15}{9}$

Check: $\frac{y}{6} = \frac{15}{9}$

1. $y = 10$

$$9y = 6 \cdot 15$$

$$9y = 90$$

$$y = 10$$

2. $\frac{8}{2.5} \propto \frac{d}{2.5}$

Check: $\frac{8}{2.5} = \frac{d}{2.5}$

2. $d = 8$

$$2.5d = 8 \cdot 2.5$$

$$2.5d = 20$$

$$d = 8$$

3. $\frac{20}{30} \propto \frac{x}{21}$

Check: $\frac{20}{30} = \frac{x}{21}$

3. $x = 14$

$$30x = 20 \cdot 21$$

$$30x = 420$$

$$x = 14$$

4. $\frac{x}{3} \propto \frac{7}{5}$

Check: $\frac{x}{3} = \frac{7}{5}$

4. $x = 4\frac{1}{5}$

$$5x = 3 \cdot 7$$

$$5x = 21$$

$$x = 4\frac{1}{5}$$

5. $\frac{7}{9} \propto \frac{b}{(b-10)}$

Check: $\frac{7}{9} = \frac{b}{b-10}$

5. $b = -35$

$$9b = 7(b-10)$$

$$9b = 7b - 70$$

$$2b = -70 \quad b = -35$$

$$\begin{aligned}
 6. \quad & \frac{4}{(n+2)} \neq \frac{7}{n} \\
 & 4n = 7(n+2) \\
 & 4n = 7n + 14 \\
 & -3n = 14 \\
 & n = -4\frac{2}{3}
 \end{aligned}$$

Check: $\frac{4}{n+2} = \frac{7}{n}$

6. $n = -4\frac{2}{3}$

$$\begin{aligned}
 7. \quad & \frac{(x-3)}{x} \neq \frac{9}{10} \\
 & 9x = 10(x-3) \\
 & 9x = 10x - 30 \\
 & -x = -30 \\
 & x = 30
 \end{aligned}$$

Check: $\frac{x-3}{x} = \frac{9}{10}$

7. $x = 30$

$$\begin{aligned}
 8. \quad & \frac{2}{3} \neq \frac{(x+4)}{18} \\
 & 3(x+4) = 2 \cdot 18 \\
 & 3x + 12 = 36 \\
 & 3x = 24 \\
 & x = 8
 \end{aligned}$$

Check: $\frac{2}{3} = \frac{x+4}{18}$

8. $x = 8$

$$\begin{aligned}
 9. \quad & \frac{4.5}{(y+5)} \neq \frac{1}{2} \\
 & 1(y+5) = 2 \cdot 4.5 \\
 & y + 5 = 9 \\
 & y = 4
 \end{aligned}$$

Check: $\frac{4.5}{y+5} = \frac{1}{2}$

9. $y = 4$

Solve the following six application problems. Make sure to show your work!

10. Find the unit rate if I drive 194.8 miles in 4 hours.

per
ONE

$$\begin{array}{r}
 \times 48.7 \\
 4 \overline{) 194.8} \\
 \underline{-16} \\
 34 \\
 \underline{-32} \\
 28 \\
 \underline{-28} \\
 0
 \end{array}$$

10. 48.7
miles
per
hour

11. The table below shows the population of towns in Montgomery, NJ.

Town	Population (in thousands)
Belle Mead	4
Skillman	8
Rocky Hill	1

Belle Mead to Skillman:

4 to 8

11a. 1 to 2

Skillman to Rocky Hill:

8 to 1

11b. 8 to 1

Belle Mead to Total Population:

4 to 13

11c. 4 to 13

12. Mrs. Kevorkian can type 80 words in 4 minutes. How many words can she type in 18 minutes?

$$\begin{array}{l} \frac{\text{words}}{\text{minutes}} \quad \frac{80}{4} \times \frac{x}{18} \\ 4x = 80 \cdot 18 \\ 4x = 1,440 \\ x = 360 \end{array}$$

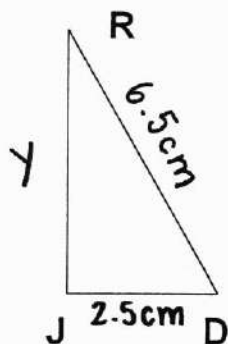
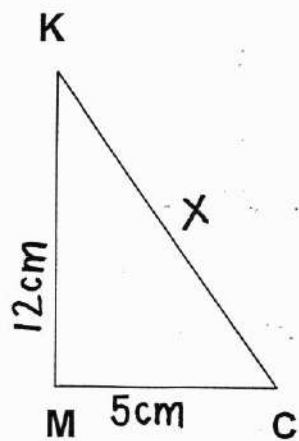
12. 360 words

13. A map has a scale of 3cm:15mi. If Princeton and Belle Mead are 2cm apart on the map, then how far apart are the two cities?

$$\begin{array}{l} \frac{\text{cm}}{\text{miles}} \quad \frac{3}{15} \times \frac{2}{x} \\ 3x = 15 \cdot 2 \\ 3x = 30 \\ x = 10 \end{array}$$

13. 10 miles

14. $\triangle KMC \sim \triangle RJD$. Using the information provided in the two triangles, find the lengths of the missing sides.



$$a. \quad \frac{12}{y} = \frac{5}{2.5}$$

$$5y = 30$$

$$y = 6$$

$$b. \quad \frac{x}{6.5} = \frac{5}{2.5}$$

$$2.5x = 32.5$$

$$x = 13$$

$$14a. \quad \overline{RJ} = \underline{6 \text{ cm}}$$

$$14b. \quad \overline{KC} = \underline{13 \text{ cm}}$$

15. You are stenciling letters on posters for an upcoming school dance. It takes you about 4 minutes to stencil 3 letters. At this rate, how long will it take you to stencil "HOMECOMING DANCE" on ten posters?

$$\begin{array}{r} 15 \text{ letters} \\ \times 10 \text{ posters} \\ \hline 150 \text{ total letters} \end{array}$$

$$\frac{4}{3} \cancel{\times} \frac{x}{150}$$

$$3x = 4 \cdot 150$$

$$3x = 600$$

$$x = 200$$

$$15. \quad \underline{200 \text{ minutes}}$$