

Domain 2: Diagnostic Assessment for Lessons 9–12

1. Ramon drove 145 miles in 2.5 hours. What was his speed in miles per hour?

- A. 48 miles per hour
- B. 52 miles per hour
- C. 58 miles per hour
- D. 362.5 miles per hour

2. What value of x makes this proportion true?

$$\frac{7.5}{x} = \frac{18}{28.8}$$

- A. 10.8
- B. 12
- C. 21.8
- D. 69.12

3. A recipe for applesauce calls for $\frac{1}{3}$ cup of honey. The recipe makes 8 servings. How many cups of honey are needed to make 20 servings?

- A. $\frac{5}{6}$ cup
- B. $1\frac{1}{6}$ cups
- C. $1\frac{1}{3}$ cups
- D. $2\frac{2}{3}$ cups

4. It takes Wayne $\frac{1}{10}$ hour to walk a $\frac{1}{6}$ -mile park loop. What is Wayne's unit rate, in miles per hour?

- A. $\frac{1}{10}$ mile per hour
- B. $1\frac{2}{3}$ miles per hour
- C. 6 miles per hour
- D. 60 miles per hour

5. What value of y makes this proportion true?

$$\frac{15}{35} = \frac{y}{84}$$

- A. $y = 21$
- B. $y = 28$
- C. $y = 36$
- D. $y = 49$

6. Nina types 126 words in 3 minutes. Which equation shows the relationship between the number of words, w , and the time, in minutes, m , that she types?

- A. $w = 3m$
- B. $w = 42m$
- C. $w = 126m$
- D. $w = 378m$

7. The function table shows the relationship between the cost and the number of ham sandwiches purchased at a deli.

Cost, C (in dollars)	Number of Sandwiches, n
1	4
2	8
3	12
4	16
5	20

Which equation shows the relationship between the cost and the number of sandwiches purchased?

- A. $C = n + 4$
- B. $C = 4n$
- C. $C = \frac{1}{4}n$
- D. $C = 4n + 4$

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8. Daniel bought 2 pounds of mixed nuts for \$7.18. Which ratio is proportional to 2 pounds at \$7.18?

- A. $\frac{\$10.77}{3 \text{ pounds}}$
- B. $\frac{\$10.83}{3 \text{ pounds}}$
- C. $\frac{\$11.18}{4 \text{ pounds}}$
- D. $\frac{\$14.20}{4 \text{ pounds}}$

9. Sondra's room is 15 feet long by 8 feet wide. She is putting carpet in the room. It costs \$3.75 per square foot. How much will it cost to carpet Sondra's room?

10. Mason earns \$10 for each lawn he mows. How much will he earn if he mows 6 lawns?

A. Write and solve an equation to solve the problem. Show your work.

B. Make a graph to display the relationship.

