

Good morning! Check your homework:

HW Page 23

- 1. 6
- 3. 30
- 5. 24
- 7. 3
- 9. 1

Got something wrong? Re-work it now!

Answers to Unit 2 Practice Test

1. 4

3. -24

5. -18

7. -2

9. 3

17. $W = 2$, $L = 12$

19. { 30, 32, 34 }

21. D.

a. $n = -15$
b. $a = 9$
c. $y = -6$
d. $x = -3$
e. $x = 0$

p 30

2-6 Unit Rates, Ratios, and Solving Proportions

Vocabulary

Ratio- A ratio is a comparison of two numbers by division.
 The ratio of a to b is a:b or $\frac{a}{b}$ where $b \neq 0$.


Unit Rate- A unit rate is a rate with denominator of 1.
 Examples: 12 pencils for 36¢ = $\frac{36}{12} = \frac{.36}{1 \text{ pencil}}$


Example 1: Using Unit Rates to Compare Pricing


To find a unit rate, make a fraction from the ratio. Then reduce by dividing to get the denominator to 1.

Use the unit rate to find out which bottle has the lowest price per ounce.

1. $\frac{\$.72}{16} = \frac{.045}{1 \text{ oz}}$ 2. $\frac{\$ 1.20}{32} = \frac{.0375}{1 \text{ oz}}$ 3. $\frac{\$ 1.60}{64} = \frac{.025}{1 \text{ oz}}$



 16 oz. for \$.72


 32 oz. for \$1.20



 64 oz. for \$1.60

✓ Understanding Check

Main Street Florist sells 24 roses for \$24.60. Fresh Flowers sell 6 roses for \$7.50. Which florist has the lowest unit rate (price per rose)?


 24 roses for \$24.60

$\frac{\$ 24.60}{24 \text{ roses}} = \frac{\$ 1.025}{1 \text{ rose}}$


 6 roses for \$7.50

$\frac{\$ 7.50}{6 \text{ roses}} = \frac{\$ 1.25}{1 \text{ rose}}$

Main Street Florist sells 24 roses for \$24.60. Fresh Flowers sell 6 roses for \$7.50. Which florist has the lowest unit rate (price per rose).



24 roses for \$24.60

$$\frac{24.60}{24} = 1.025 / \text{rose}$$

↑
Cheaper



6 roses for \$7.50

$$\frac{7.50}{6} = 1.25 / \text{rose}$$

30

Property: Cross Products of a Proportion

If $\frac{a}{b} = \frac{c}{d}$, then $ad = bc$

Example:

$$\frac{4}{8} = \frac{3}{6}, \text{ then } 24 = 24$$

Example 2: Solving Proportions

1. $\frac{t}{9} = \frac{5}{6}$ Step 1: cross mult. ply
 $6t = 45$ Step 2: Solve
 $t = \frac{45}{6} = \frac{15}{2}$ Step 3: reduce if possible

2. $\frac{x}{8} = \frac{5}{6}$ 3. $\frac{y}{12} = \frac{4}{7}$ 4. $\frac{18}{63} = \frac{m}{15}$ (Hint: You can reduce first)
 $6x = 40$ $7y = 48$ $\frac{2 \cdot 9}{3 \cdot 21} = \frac{m}{15}$
 $x = \frac{40}{6} = \frac{20}{3}$ $y = \frac{48}{7} = 6.857142857...$ $\frac{2}{7} = \frac{m}{15}$
 $7m = 30$
 $m = \frac{30}{7}$

Understanding Check

a. $\frac{a}{8} = \frac{4}{3}$

b. $\frac{x}{6} = \frac{7}{2}$

c. $\frac{2}{9} = \frac{m}{4}$

d. $\frac{9}{11} = \frac{16}{x}$

a. $\frac{32}{3}$
b. 21
c. $\frac{8}{9}$
d. $\frac{176}{9}$