# Lesson 66 • Special Right Triangles

*Power Up*

– *Facts*

– *Mental Math*

– *Problem Solving*

*New Concepts*

– *Examples*

– *Practice Set*

*Written Practice*



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**Facts** Solve each proportion.

| | | | |
|---|---|---|---|
| $\frac{x}{12} = \frac{4}{6}$<br>$x = 8$ | $\frac{5}{x} = \frac{10}{30}$<br>$x = 15$ | $\frac{8}{16} = \frac{x}{4}$<br>$x = 2$ | $\frac{3}{6} = \frac{9}{x}$<br>$x = 18$ |
| $\frac{x}{20} = \frac{2}{10}$<br>$x = 4$ | $\frac{3}{x} = \frac{5}{15}$<br>$x = 9$ | $\frac{7}{14} = \frac{x}{12}$<br>$x = 6$ | $\frac{3}{12} = \frac{5}{x}$<br>$x = 20$ |
| $\frac{x}{100} = \frac{5}{25}$<br>$x = 20$ | $\frac{12}{x} = \frac{60}{20}$<br>$x = 4$ | $\frac{10}{100} = \frac{x}{50}$<br>$x = 5$ | $\frac{9}{27} = \frac{10}{x}$<br>$x = 30$ |



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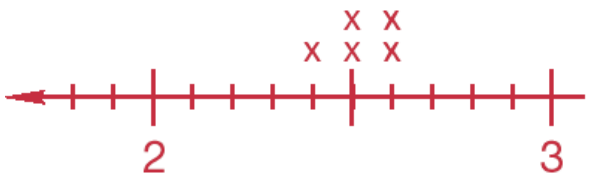
## Written Practice

1. 39 bags
2. 38 students
3. 8.2 oz
4. mean: 2.52 cm; median: 2.5 cm; mode: 2.5 cm, 2.6 cm; range: 0.2 cm




5. $x = 60°$
6. 18 feet
7. $y = \frac{1}{2}x + 3$
8. $\frac{yz}{x}$
9. $x = 21$
10. $x = 6, -6$
11. 38.13 $mm^2$
12. a. $0.1\overline{6}$
    b. $\frac{1}{6}$



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## Written Practice *continued*

**13.** a. $0.6, 66\frac{2}{3}\%$

b. Sample: $\frac{2}{3}$ of the band members are in choir."

**14.** 2

**15.** $\frac{100 \text{ km}}{1 \text{ hr}} \cdot \frac{1 \text{ mi}}{1.6 \text{ km}} = 62.5 \text{ mi/hr}$

**16.** $\frac{\$12}{1 \text{ hr}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{100¢}{\$1} = 20¢ \text{ per min}$

**17.** a. $5x(3x - 2)$

b. $7x - 21$

**18.** $-1$

**19.** $\frac{b^2 r}{x^2}$

**20.** $\frac{21}{32}$

**21.** $-16$



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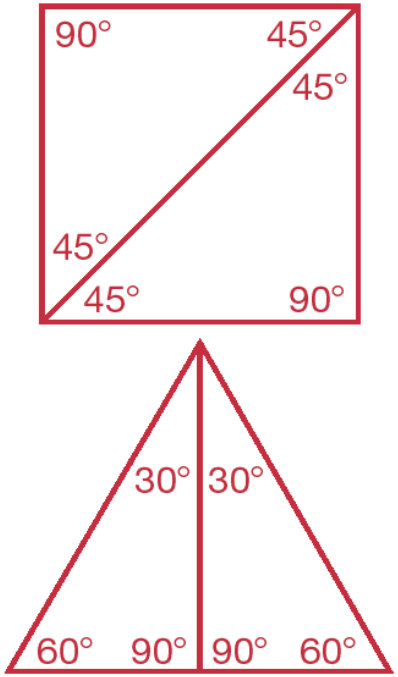
## Written Practice *continued*

**22.** x = 5

**23.** x = −3

**24.**




**25.** Yes, the ratio of volume to time is constant. $\frac{10}{8} = \frac{t}{100}$, $8t = 1000$, $t = 125$ The beaker will fill in 125 seconds ( just over 2 minutes).



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