

Brown's Chapter 7 Practice Test

KEY

12, Solve each proportion

1. $\frac{3}{5} = \frac{x}{15}$
 $45 = 5x$
 $x = 9$

2. $\frac{x+1}{5} = \frac{x-1}{2}$
 $2x+2 = 5x-5$
 $3x = 7$
 $x = 2.33$

3. The ratio of seniors to juniors in the Math Club is 2:3. If there are 40 upperclassman in club, how many are seniors?

$2x+3x = 40$
 $5x = 40$
 $x = 8$
 16 seniors

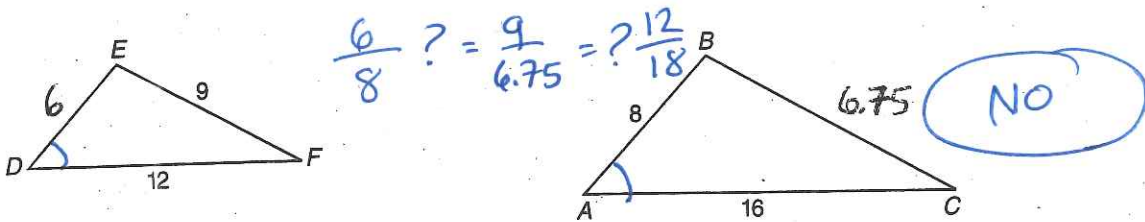
4. A 15-foot building casts a 9-foot shadow. How tall is a building that casts a 30-foot shadow at the same time?

50ft. $\frac{15}{9} = \frac{x}{30}$

5. A photo that is 3 inches wide and 5 inches high was enlarged so that it is 12 inches wide. How high is the enlargement?

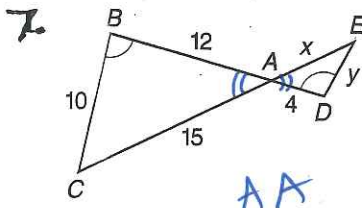
$3 \times \frac{12}{3} = 5 \times \frac{x}{5}$
 $12 \times \frac{12}{3} = 5x$
 $48 = 5x$
 $x = 9.6$
 20 inches

6. Are the triangles similar? If so, what is the scale factor?



#7-8

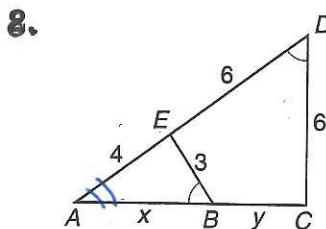
Identify the similar triangles in each figure. Explain why they are similar and use the given information to find x and y.



AA
 $\triangle ABC \sim \triangle ADE$

$\frac{12}{15} = \frac{4}{x}$
 $12x = 60$
 $x = 5$

$\frac{10}{12} = \frac{y}{4}$
 $40 = 12y$
 $y = 3.33$



AA
 $\triangle ABE \sim \triangle ADC$

~~$\frac{x}{4} = \frac{16}{x+y}$~~

$\frac{x}{10} = \frac{3}{6}$
 $6x = 30$
 $x = 5$

$\frac{x+y}{4} = \frac{6}{3}$
 $5+y = 8$
 $y = 3$

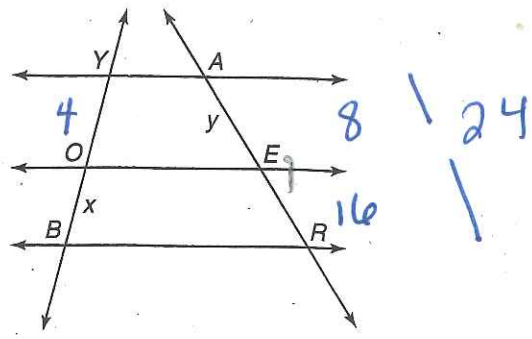
9. In the figure at the right, $\overline{YA} \parallel \overline{OE} \parallel \overline{BR}$. Find the values of x and y if $YO = 4$, $ER = 16$, and $AR = 24$.

$y = 8$

$24 - 16$

$\frac{4}{8} = \frac{x}{16}$

$x = 8$



10. Are any of the following rectangles similar? If so, which ones?

- a. 7 ft by 13 ft
- b. 14 in. by 39 in. .358
- c. 1 ft by 3 ft
- d. $2\frac{1}{3}$ ft by $6\frac{1}{2}$ ft

11. If $\frac{a}{b} = \frac{c}{d}$, then \square ?

a. $\frac{a+b}{b} = \frac{c+b}{d}$

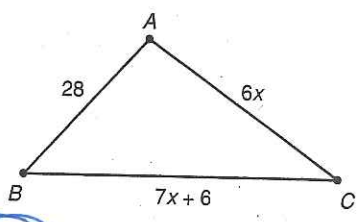
~~$x. ac = bd$~~

c. $\frac{a+b}{b} = \frac{c+d}{d}$

d. $\frac{a}{b} = \frac{a+c}{b+d}$

$ad + bd = cb + bd$
 $ad = cb$ ✓

12. The ratios of the side lengths of triangle ABC are 7:9:12 (AB:AC:BC). Solve for x .



$\frac{7}{9} = \frac{28}{6x}$

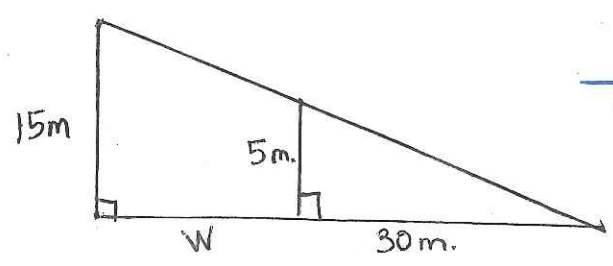
$42x = 525$ $x = 6$

13. Write as a ratio

$\frac{3 \text{ yards}}{48 \text{ inches}}$

$\frac{108 \text{ in}}{48 \text{ in}} = \frac{9}{4}$

14. Solve for w .



$\frac{15}{w+30} = \frac{5}{30}$

$450 = 5w + 150$

$300 = 5w$

$w = 60$