1.) $\sqrt{2k^2+17}-x=0$

If $k>0$ and $x=7$ in the equation above, what is the value of k?

A) 2

B) 3

C) 4

D) 5

$\sqrt{2k^2+17}-7=0$

$(\sqrt{2k^2+17})^2=(7)^2$

$2k^2+17=49$

$2k^2=32$

$k^2=16$

$k=4$

2.) Which of the following complex numbers is equivalent to $\frac{3-5i}{8+2i}$? (Note: $i=\sqrt{-1}$

A) $\frac{3}{8}-\frac{5i}{2}$

B) $\frac{3}{8}+\frac{5i}{2}$

C) $\frac{7}{34}-\frac{23i}{34}$

D) $\frac{7}{34}+\frac{23i}{34}$

	3	$-5i$
8	24	$-40i$
$2i$	$-6i$	$10i^2$

$-10(-1)$

$\frac{3-5i}{8+2i}\cdot\frac{8-2i}{8-2i}$

$\frac{24-46i-10}{64+4}=\frac{14-46i}{68}$

3.) $ax + by = 12$

$2x + 8y = 60$

In the system of equations above, a and b are constants. If the system has infinitely many solutions, what is the value of $\frac{a}{b}$?

$\frac{2}{5}x + \frac{8}{5}y = 12$

$\frac{2}{5} \cdot \frac{5}{8} = \frac{1}{4}$

$\frac{2}{5} \div \frac{8}{5}$

Hwk #11 Answers:

1. 6
5. $14\sqrt{2}$
6. 25
9. s
10. r
11. c
12. a; a
13. h
14. b
17. 10
18. $6\sqrt{3}$
50. 4

Algebra **Find the geometric mean of each pair of numbers.**

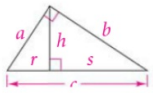
1. 4 and 9 **2.** 4 and 10 **3.** 4 and 12 **4.** 3 and 48

5. 7 and 56 **6.** 5 and 125 **7.** 9 and 24 **8.** 7 and 9

Algebra **Refer to the figure to complete each proportion.**

9. $\frac{r}{h} = \frac{h}{\square}$ **10.** $\frac{c}{a} = \frac{a}{\square}$ **11.** $\frac{\square}{b} = \frac{b}{s}$

12. $\frac{r}{\square} = \frac{\square}{c}$ **13.** $\frac{r}{h} = \frac{\square}{s}$ **14.** $\frac{s}{b} = \frac{\square}{c}$



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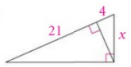

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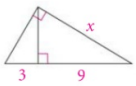


Solve each proportion.

1. $\frac{3}{t} = \frac{4}{12}$ $4t = 36$ $t = 9$

2. $\frac{5}{9} = \frac{75}{x}$ $5X = 675$ $X = 135$

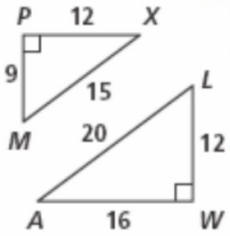
Complete the following proportions. Put the correct values next to the ?.

3. If $\frac{y}{x} = \frac{3}{5}$, then $\frac{3}{y} = \frac{5}{X}$

4. If $\frac{c}{d} = \frac{4}{7}$, then $\frac{c+d}{d} = \frac{4+7}{7}$

Explain why the triangles below are similar: AA~, SAS~, or SSS~. Show any work necessary to explain your reasoning below the triangles. Then write a similarity statement.

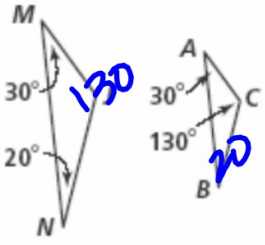
5.
Reason: SAS~
Statement: $\triangle MPX \sim \triangle LWA$



$\frac{9}{12} = \frac{12}{16}$

$\frac{3}{4} = \frac{3}{4}$

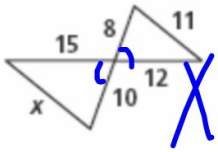
6.
Reason: AA~
Statement: $\triangle MJN \sim \triangle ACB$



130

20

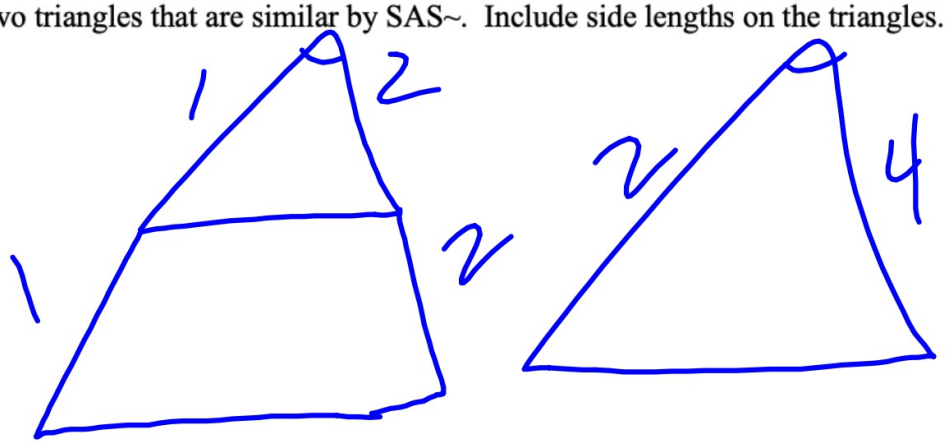
7.
Reason: SSS~
Statement: _____



$\frac{11}{x} = \frac{15}{12}$

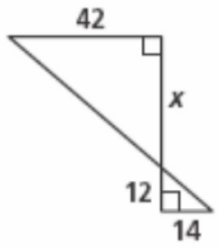
$x = 13.75$

8. Draw an example of two triangles that are similar by SAS~. Include side lengths on the triangles.



The triangles below are similar. Find the value of x.

9. $x =$ 36

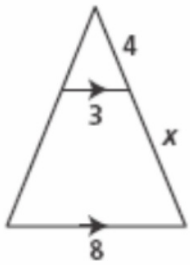


$\frac{42}{14} = \frac{x}{12}$

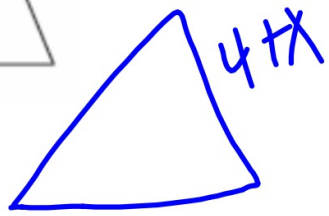
$14x = 504$

$x = 36$

10. $x =$ 6.6



$\frac{4}{4+x} = \frac{3}{8}$

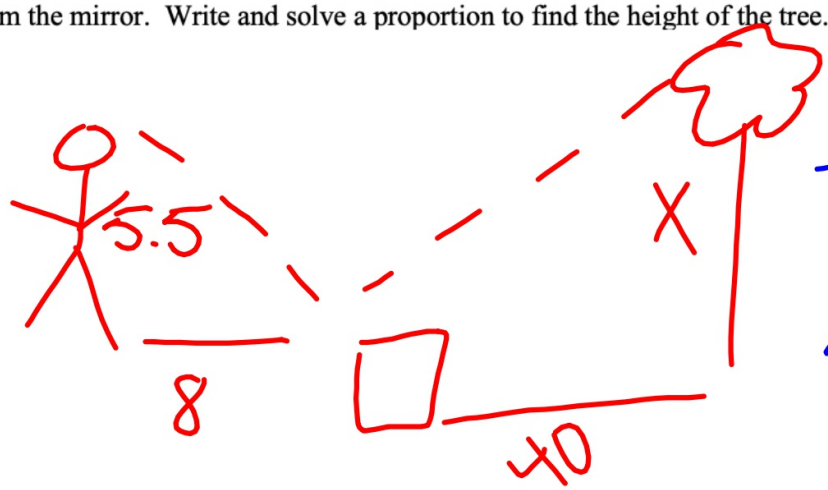


$12 + 3x = 32$

$3x = 20$

$x = 6.6$

11. Mike places a mirror on the ground 40 feet from the base of a tree. He walks backwards until he can see the top of the tree in the mirror. At that point, Mike's eyes are 5.5 feet above the ground and his feet are 8 feet from the mirror. Write and solve a proportion to find the height of the tree.

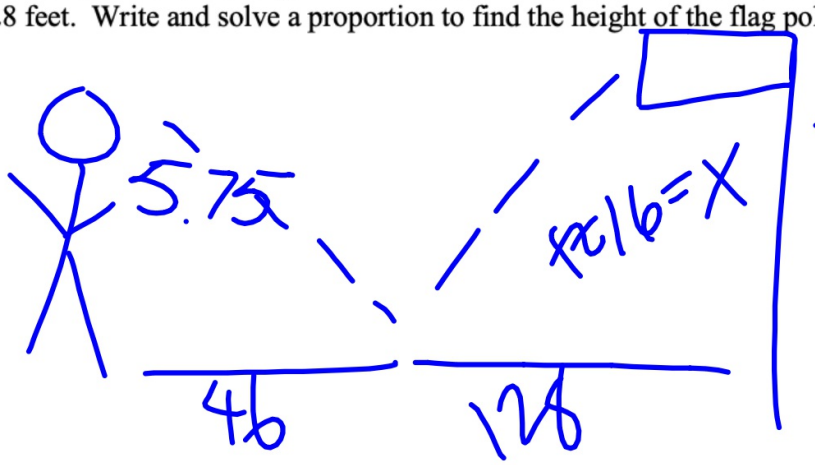


$\frac{5.5}{x} = \frac{8}{40}$

$8x = 220$

$x = 27.5$ ft

12. Shelby wants to measure the height of the flag pole in front of her school by using her height and the length of her shadow. After school, she goes outside and has a friend measure her height and shadow. Shelby's height is 5.75 ft and the length of her shadow is 46 feet. At the same time, the flag pole has a shadow of 128 feet. Write and solve a proportion to find the height of the flag pole.



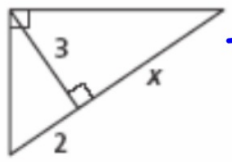
$\frac{5.75}{x} = \frac{46}{128}$

$46x = 736$

$x = 16$

Find the values of the variables. You can leave your answers as square roots or decimals.

13.



cor1:

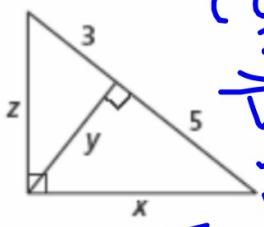
$\frac{2}{3} = \frac{3}{x}$

$2x = 9$

$x = 4.5$

$x =$ 4.5

14.



cor1:

$\frac{3}{y} = \frac{y}{5}$

$y^2 = 15$

$x =$ $2\sqrt{10}$

$y =$ $\sqrt{15}$

$z =$ $2\sqrt{6}$

cor2:

$\frac{5}{x} = \frac{x}{8}$ $\quad \frac{3}{2} = \frac{2}{8}$

$x^2 = 40$ $\quad 2^2 = 24$

$x = 2\sqrt{10}$ $\quad 2 = 2\sqrt{6}$

Classwork: Practice Similar Triangles (Section 7.3)

IXL #7 - P.5 & P.7 due Friday at 4pm!