

Questions on 6.4 HW?

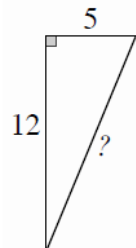
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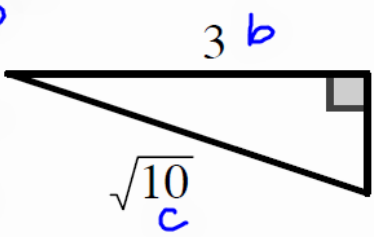
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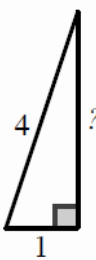
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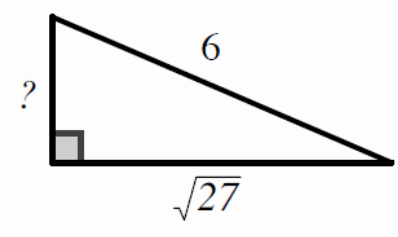
Find the missing side in each right triangle. $a^2 + b^2 = c^2$ → Pythagorean Thm.

1. 


2. $a^2 + 3^2 = \sqrt{10}^2$
 $a^2 + 9 = 10$
 $\frac{a^2}{9} = \frac{10}{9}$
 $\sqrt{a^2} = \sqrt{1}$
 $a = 1$


 $a = 1$

3. 

4. 

Create a proportion for each set of similar triangles. Then solve the proportion.

5. 

6. 

8.50 x 11.00 in

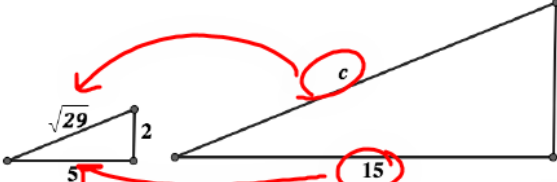
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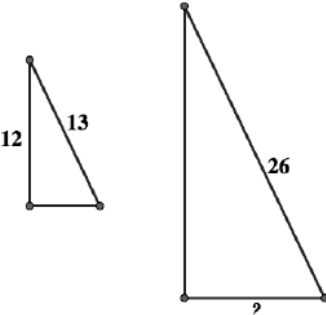
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Create a proportion for each set of similar triangles. Then solve the proportion.

5. 

6. 

$\frac{c}{15} = \frac{15}{5}$

~~$\frac{c}{\sqrt{29}} = \frac{15}{5}$~~

$\frac{c}{15} = \frac{15}{5}$

$\frac{c}{15} = 3$

$c = 3 \sqrt{29} \approx 16.2$

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8.50 x 11.00 in

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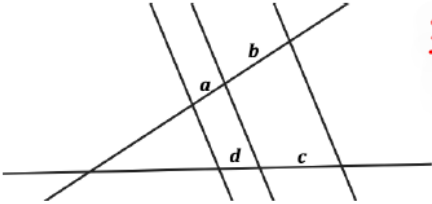
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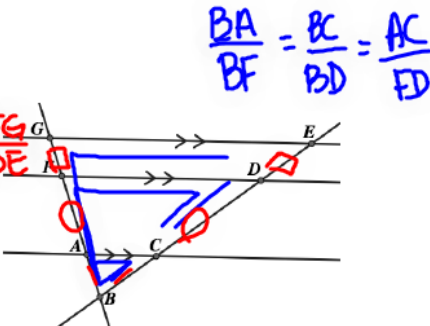
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For questions 7 and 8, write three equal ratios.

7. The letters a, b, c and d represent lengths of line segments.



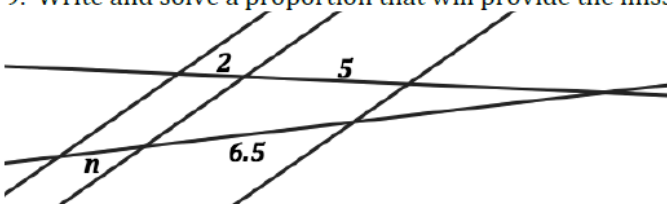
8.



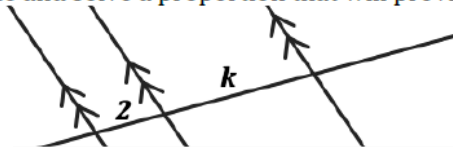
$\frac{BA}{BF} = \frac{BC}{BD} = \frac{AC}{ED}$

$\frac{BA}{AF} = \frac{BC}{CD} = \frac{FG}{DE}$

9. Write and solve a proportion that will provide the missing length.



10. Write and solve a proportion that will provide the missing length.



8.50 x 11.00 in

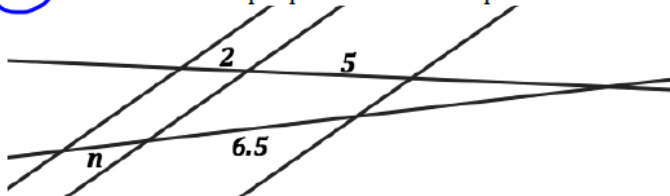
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9. Write and solve a proportion that will provide the missing length.



Handwritten solution for question 9:

$$\frac{2}{n} = \frac{5}{6.5}$$

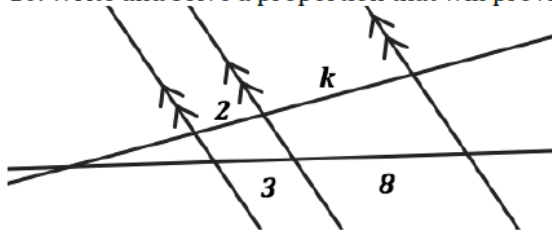
or $\frac{2}{5} = \frac{n}{6.5}$

$$2(6.5) = 5 \cdot n$$

$$13 = 5n$$

$$2.6 = \frac{13}{5} = n$$

10. Write and solve a proportion that will provide the missing length.

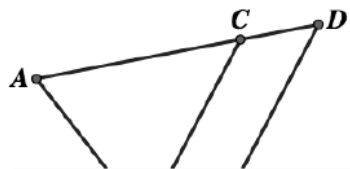


Handwritten solution for question 10:


$$2.6 = \frac{13}{5} = n$$

For questions 11 - 14 find and label the parallel lines. (i.e. $\overline{AB} \parallel \overline{CD}$) Then write a similarity statement for the triangles that are similar. (i.e. $\triangle ABC \sim \triangle XYZ$)

11.



12.



8.50 x 11.00 in

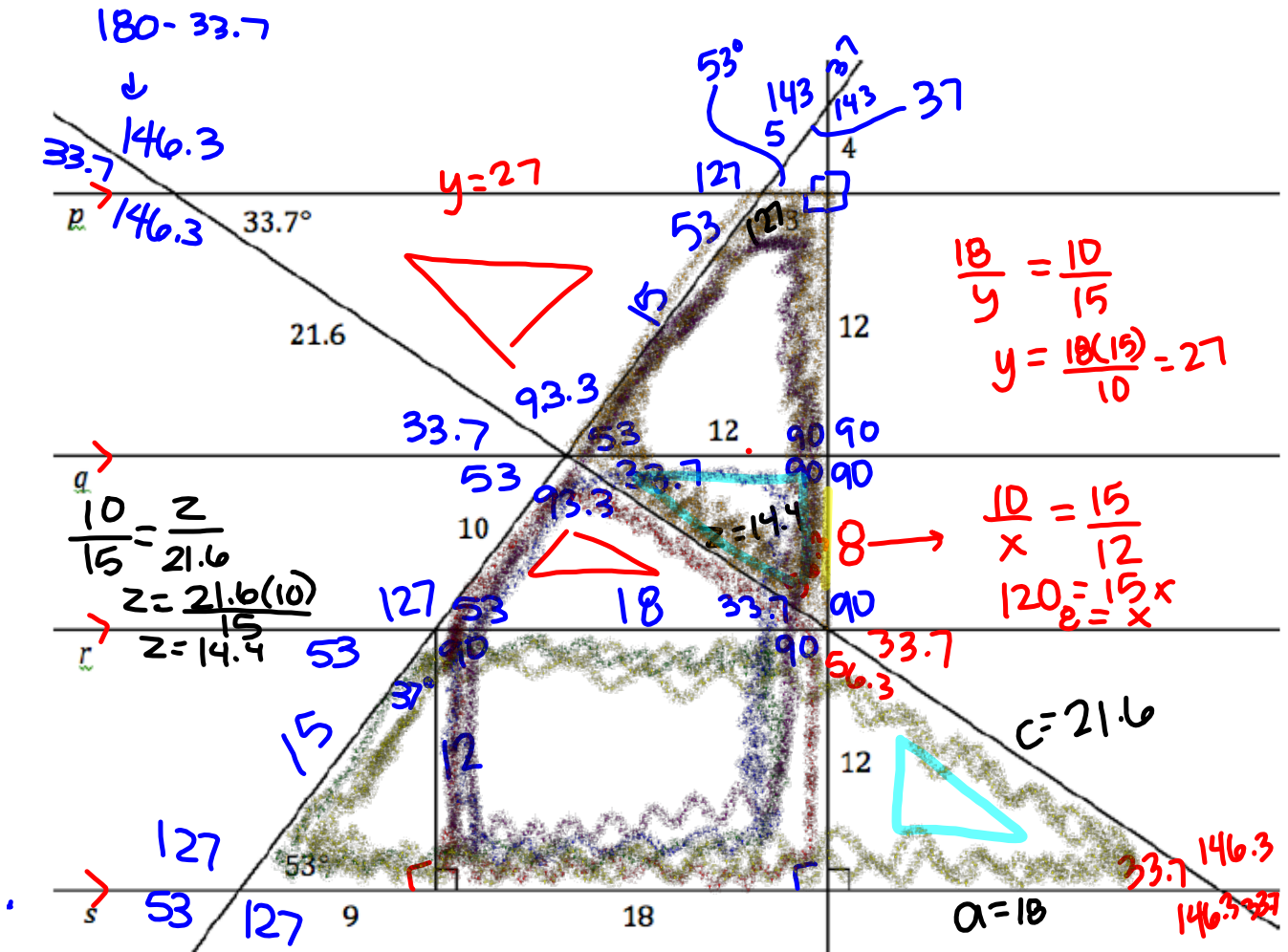
6.5 Measured Reasoning

A Practice Understanding Task

Find the measures of all missing sides and angles by using geometric reasoning, not rulers and protractors. If you think a measurement is impossible to find, identify what information you are missing.



Lines $p, q, r,$ and s are all parallel.



$$\frac{18}{y} = \frac{10}{15}$$

$$y = \frac{18(15)}{10} = 27$$

$$\frac{10}{x} = \frac{15}{12}$$

$$120 = 15x$$

$$8 = x$$

$$\frac{10}{15} = \frac{z}{21.6}$$

$$z = \frac{21.6(10)}{15}$$

$$z = 14.4$$

$$\frac{8}{12} = \frac{14.4}{c}$$

$$c = \frac{12(14.4)}{8}$$

$$c = 21.6$$

$$\frac{12}{a} = \frac{8}{12}$$

$$a = \frac{144}{8}$$

$$a = 18$$

1. Identify at least three different quadrilaterals in the diagram. Find the sum of the interior angles for each quadrilateral. Make a conjecture about the sum of the interior angles of a quadrilateral.

$$= 127 + 90 + 56.3 + 53 + 33.7 = 360^\circ$$

Conjecture: Interior \angle s sum to 360°

2. Identify at least three different pentagons in the diagram. Find the sum of the interior angles for each pentagon. Make a conjecture about the sum of the interior angles of a pentagon.

$$= 93.3 + 53 + 90 + 90 + 90 + 33.7 = 540^\circ$$

Conjecture: Interior \angle s sum to 540°

3. Do you see a pattern in the sum of the angles of a polygon as the number of sides increases? How can you describe this pattern symbolically?

of sides
in figure
= n

$$180 (\# \text{ of sides in figure} - 2)$$

$$180(n - 2)$$

4. How can you convince yourself that this pattern holds for all n -gons?

Keep trying with polygons

13-gon

14-gon

⋮



Homework

Finish 6.5 "Ready, Set, Go"