

Chapter 7 Study Guide

Geometry



Name: _____

Target 7.1: Determine if polygons are similar and write a similarity statement.

Self-Assess: 1 (Uh Oh) 2 3 (I am okay) 4 5 (I got this!!!!)

1) Two polygons are similar only if the:

corresponding angles are equal and their corresponding sides are proportional. = ratios

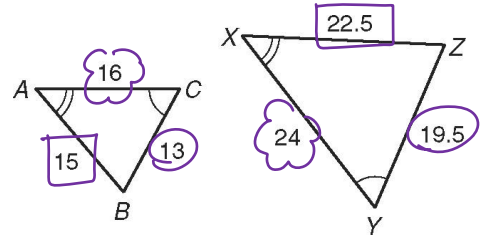
2) Give the similarity ratio and write a similarity statement.

Ratio: 2/3

Similarity Statement: $\triangle ABC \sim \triangle XZY$

$$\frac{13}{19.5} = \frac{15}{22.5} = \frac{16}{24}$$

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



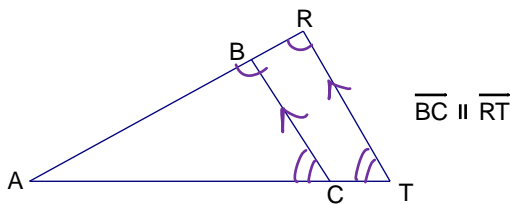
Target 7.3: Identify the postulate used to show triangles are similar and write a similarity statement.

Self-Assess: 1 (Uh oh) 2 3 (I am okay) 4 5 (I got this!!!!)

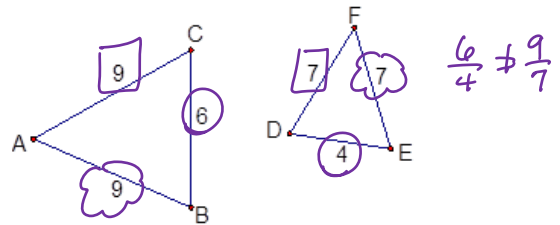
SHOW YOUR WORK TO PROVE WHY THE TRIANGLES ARE (OR ARE NOT) SIMILAR!!!

5) $\triangle ABC \sim \triangle$ ART by AA[~]

6) $\triangle ABC \sim \triangle$ X by Not[~]

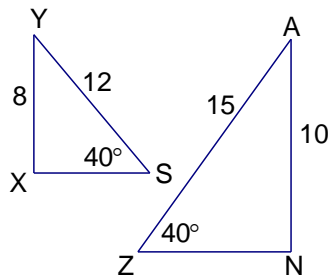


If \parallel lines, then $\angle ABC \cong \angle R$
 $\angle ACB \cong \angle T$ } b/c corr \angle s \cong .

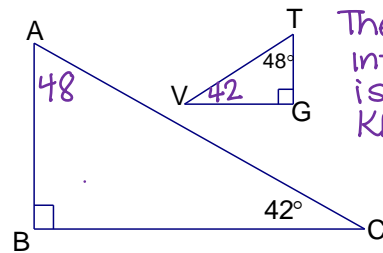


7) $\triangle YXS \sim \triangle$ _____ by Not[~]

8) $\triangle ABC \sim \triangle$ TGV by AA[~]



cannot use SSA!



The sum of the interior \angle s of a \triangle is 180° . Since we know

Target 7.3: Find side lengths of similar triangles.

Self-Assess: 1 (Uh oh)

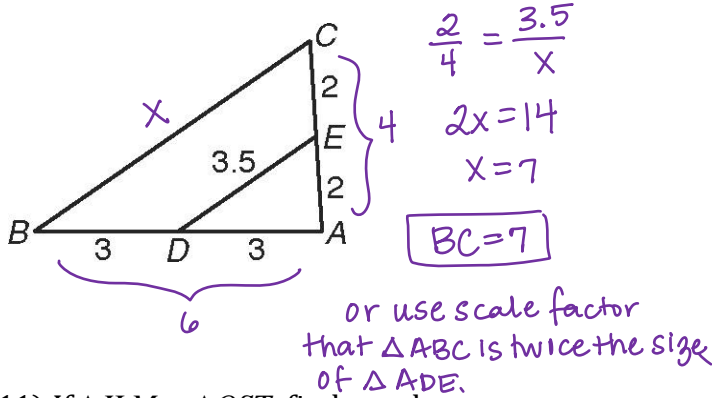
2

3 (I am okay)

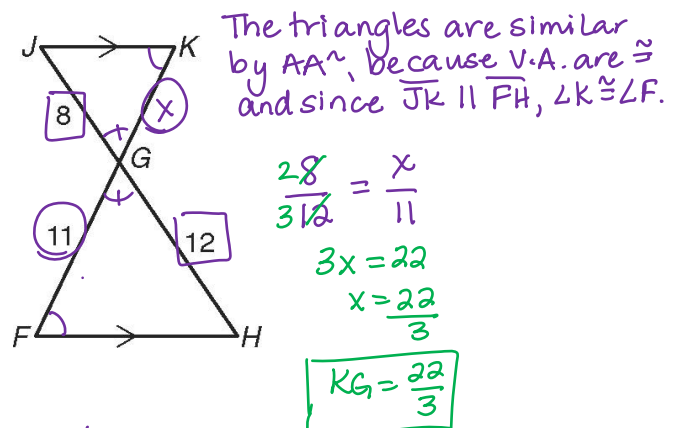
4

5 (I got this!!!)

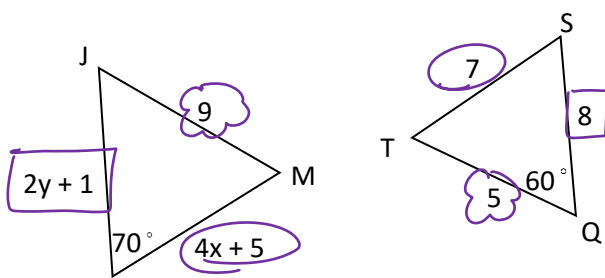
9) Find BC given that $\triangle EAD \sim \triangle CAB$.



10) Why are the triangles similar? Find GK.



11) If $\triangle JLM \sim \triangle QST$ find x and y.



Handwritten notes for problem 11:
 $\frac{9}{5} = \frac{2y+1}{8}$
 $5(2y+1) = 72$
 $10y + 5 = 72$
 $10y = 67$
 $y = 6.7$
 $\frac{9}{5} = \frac{4x+5}{7}$
 $5(4x+5) = 63$
 $20x + 25 = 63$
 $20x = 38$
 $x = 1.9$

Target 7.4.a: Use the Triangle Proportionality Theorem to find lengths of segments.

Self-Assess: 1 (Uh oh)

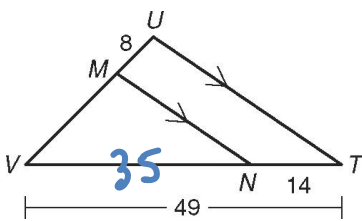
2

3 (I am okay)

4

5 (I got this!!!)

12) Find the length of segment MV.

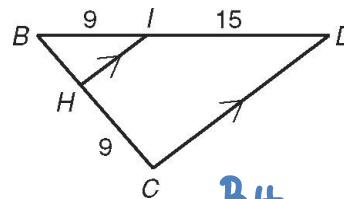


Handwritten notes for problem 12:
 $\frac{MV}{8} = \frac{35}{14}$
 $14MV = 280$

$MV = 20$

Easier to reduce to $\frac{5}{2}$
 $\frac{MV}{8} = \frac{5}{2}$
 $2MV = 40$
 $MV = 20$
 No calculator necessary

13) Find the length of segment BH.



Handwritten notes for problem 13:
 $\frac{BH}{9} = \frac{9}{15}$
 $15BH = 81$
 $BH = 5.4$

Target 7.4.b: Use the Two Transversal Proportionality Corollary to find lengths of segments.

Self-Assess: 1 (Uh oh)

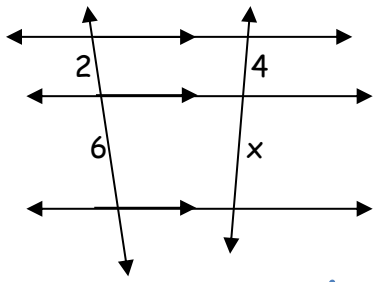
2

3 (I am okay)

4

5 (I got this!!!)

14) Find x.

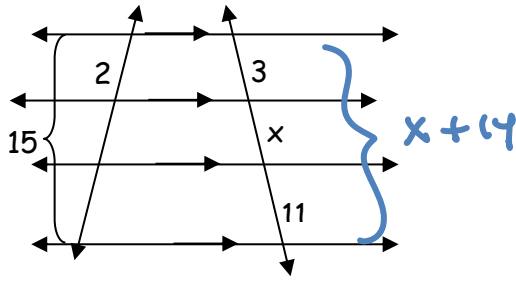


$$\frac{2}{6} = \frac{4}{x}$$

$$2x = 24$$

$$x = 12$$

15) Find x.



$$\frac{2}{15} = \frac{3}{x+14}$$

$$2x + 28 = 45$$

$$2x = 17$$

$$x = 8.5$$

Target 7.4.c: Use the Angle Bisector Theorem to find lengths of segments.

Self-Assess: 1 (Uh oh)

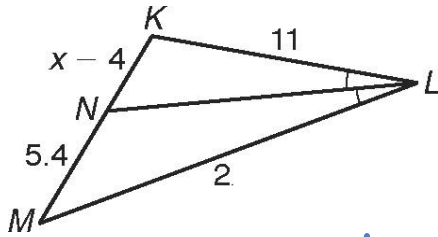
2

3 (I am okay)

4

5 (I got this!!!)

16) Find x.



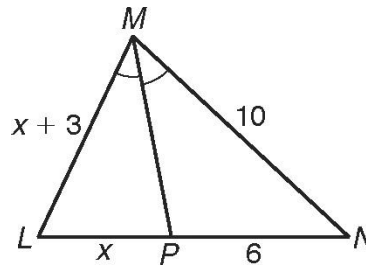
$$\frac{11}{2} = \frac{x-4}{5.4}$$

$$59.4 = 2x - 8$$

$$67.4 = 2x$$

$$x = 33.7$$

17) Find LP and LM.



$$\frac{10}{6} = \frac{x+3}{x}$$

$$10x = 6x + 18$$

$$4x = 18$$

$$x = 4.5$$

$$LP = 4.5$$

$$LM = 7.5$$

Target 7.5 a: Use ratios to make indirect measurements

Self-Assess: 1 (Uh oh)

2

3 (I am okay)

4

5 (I got this!!!)

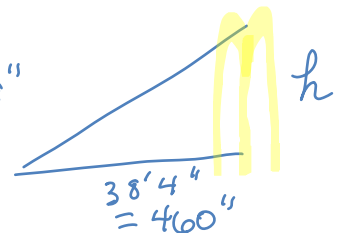
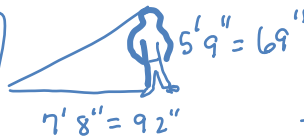
18) John, who is 5 ft. 9 in. tall, wanted to know the height of the MacDonald's sign. At the same time of day, he measured his shadow and the sign's shadow. He found that his shadow was 7 ft. 8 in. and the the sign's shadow was 38 ft. 4 in. shadow. What is the height of the sign in inches? In feet?

$$\frac{92}{460} = \frac{69}{x}$$

$$92x = 31740$$

$$x = 345$$

$$\frac{345''}{12''} = 28.75'$$



19) Lady Liberty holds a tablet in her left hand. The tablet is 7.19 m long and 4.14 m wide. If you made a scale drawing using the scale 1 cm : 0.75 m, what would be the dimensions of the length and the width to the nearest tenth? (Hint: you need to set up two proportions)

$$\frac{1}{0.75} = \frac{l}{7.19}$$

$$0.75l = 7.19$$

$$\frac{1}{0.75} = \frac{w}{4.14}$$

$$0.75w = 4.14$$

5.5

$$\text{length} = 9.6 \text{ cm}$$

$$\text{width} = 5.5 \text{ cm}$$

$$l = 9.6$$

$$w =$$

Target 7.5.b: Find measurements of similar polygons.

Self-Assess: 1 (Uh oh)

2

3 (I am okay)

4

5 (I got this!!!)

20) Given that $\triangle LMN \sim \triangle QRS$, find the perimeter and area of $\triangle QRS$.

Similarity ratio: $\frac{13}{9.1} = \frac{10}{7}$

Perimeters are
in the same ratio

$$\frac{10}{7} = \frac{36}{P_2}$$

$$10P_2 = 252$$

$$P_2 = 25.2 \text{ cm}$$

Areas are in
the square of the ratio

$$\frac{100}{49} = \frac{60}{A_2}$$

$$100A_2 = 2940$$

$$A_2 = 29.40 \text{ cm}^2$$

