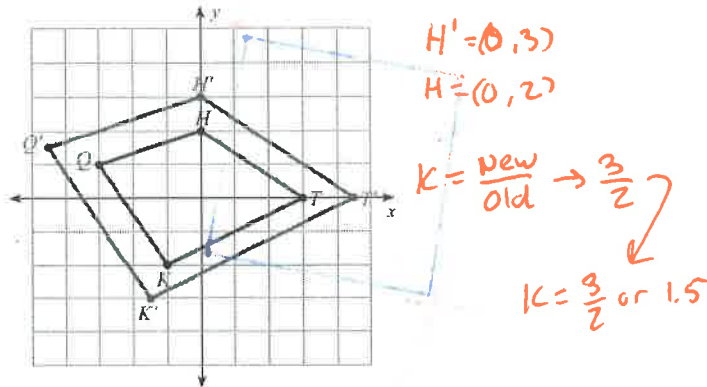


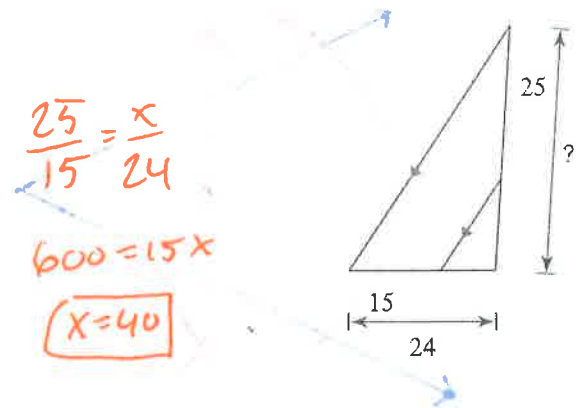
Unit 2 Study Guide Part 2

Name \_\_\_\_\_ S \_\_\_\_\_

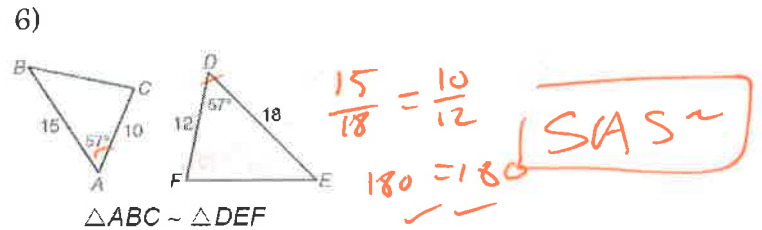
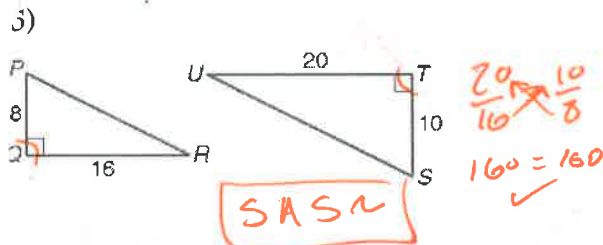
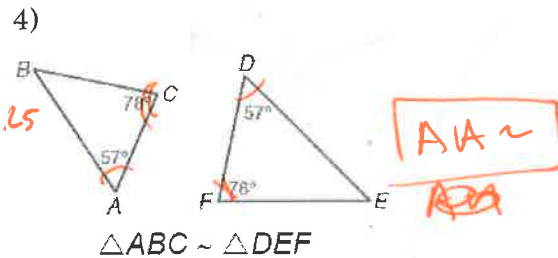
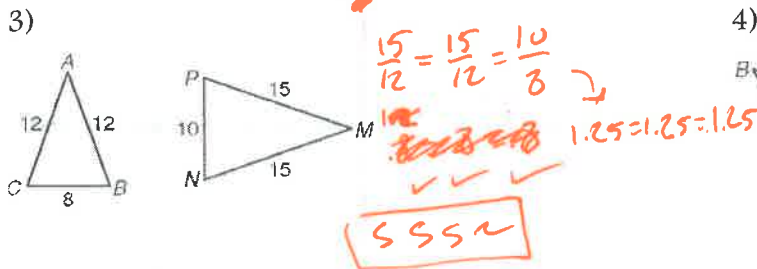
1) Determine the dilation scale factor.



2) Find the missing side, ?

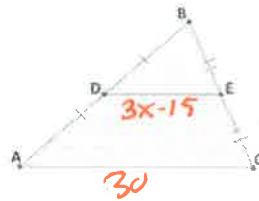


Determine if each set of triangles are similar by AA~, SAS~ or SSS~. Otherwise, write Not Possible.

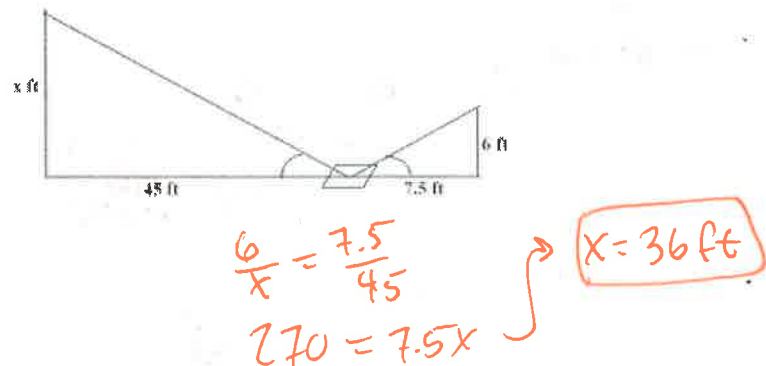


7) If  $\overline{DE} = 3x - 15$  and  $\overline{AC} = 30$ , find x.

$3x - 15 = \frac{30}{2}$   
 $3x - 15 = 15$   
 $3x = 30$   
 $x = 10$



8) Find the length of X.



9) If the **area** of a triangle gets smaller from a dilation, write an example of a scale factor that would create this transformation.

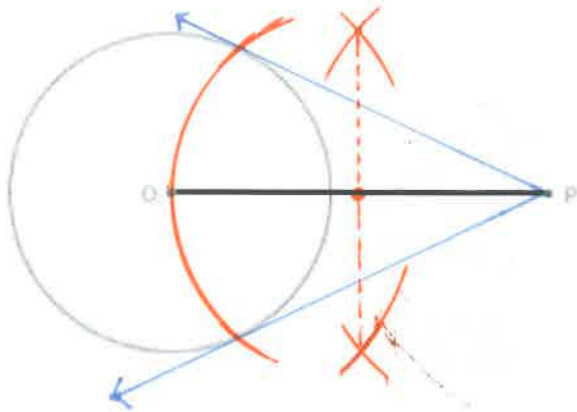
$k = \text{any number between } 0 \text{ and } 1$

10) If the **perimeter** of a triangle gets larger from a dilation, write an example of a scale factor that would create this transformation.

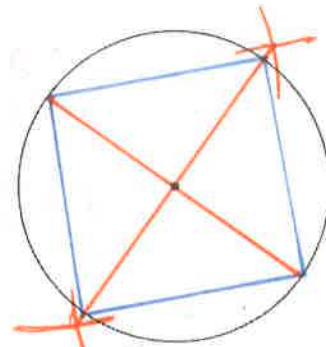
$k = \text{any number } \textcircled{>} \text{ greater than } 1$

For all by-hand constructions use a compass and straightedge. DO NOT erase your construction marks.

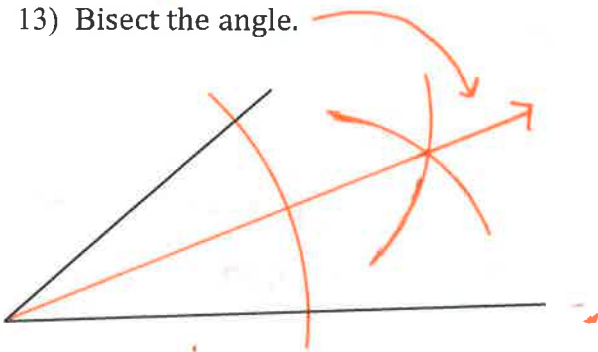
11) Construct a line tangent to circle O from point P.



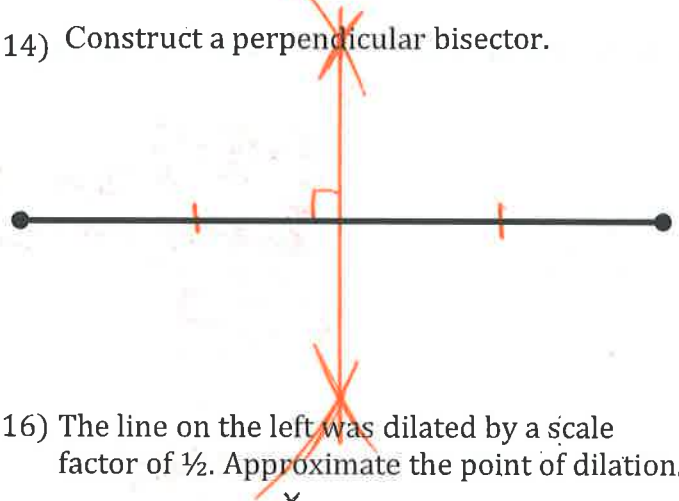
12) Construct a square inscribed in a circle.



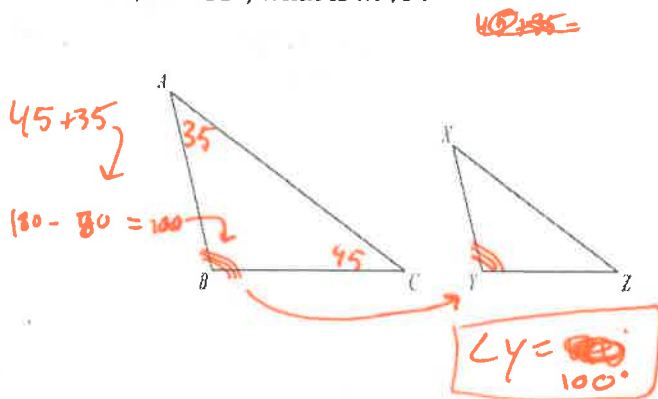
13) Bisect the angle.



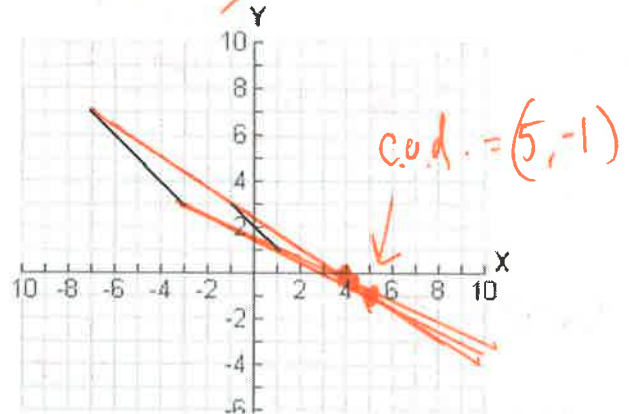
14) Construct a perpendicular bisector.



15) In the triangles shown,  $\triangle ABC$  is dilated by a factor of  $\frac{3}{5}$  to form  $\triangle XYZ$ . Given that  $m\angle C = 45^\circ$  and  $m\angle A = 35^\circ$ , what is  $m\angle Y$ ?

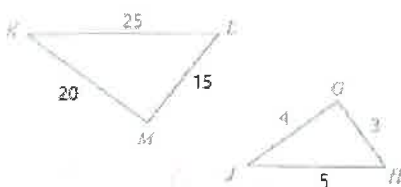


16) The line on the left was dilated by a scale factor of  $\frac{1}{2}$ . Approximate the point of dilation.



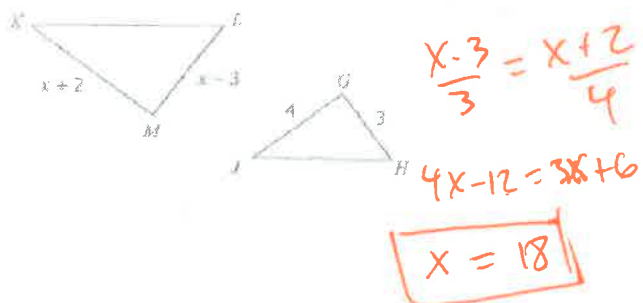
17) The triangles at the right are similar. Complete the similarity statement using the figures below.

$\triangle LMK \sim \triangle \underline{HGI}$

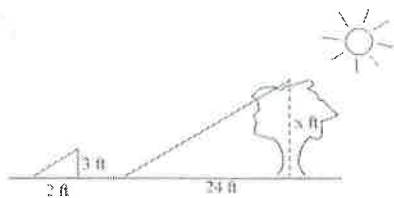


18)

Given  $\triangle KLM \sim \triangle JHG$ , find  $x$ .



19) If a tree casts a 24-foot shadow at the same time that a yardstick casts a 2-foot shadow, find the height of the tree.



$$\frac{2}{3} = \frac{24}{x}$$

$$2x = 72$$

$$x = 36 \text{ ft}$$

20) On level ground, the base of a tree is 30 ft from the bottom of a 33-ft flagpole. The tree is shorter than the pole. At a certain time, their shadows end at the same point 71 ft from the base of the flagpole. How tall is the tree?



$$\frac{33}{x} = \frac{71}{41}$$

$$1353 = 71x$$

$$x = 19.06 \text{ ft}$$

**Constructions Review**

Match each construction to its image. Highlight the first step of each construction. If complete, highlight the last step of the construction in another color. If incomplete, complete the construction.

<p>19) <u>A</u> Copying an angle</p> <p>20) <u>J</u> Hexagon inscribed in a circle</p> <p>21) <u>B</u> Copying a line segment</p> <p>22) <u>C</u> Bisecting an angle</p> <p>23) <u>I</u> Square inscribed in a circle</p> <p>24) <u>D</u> Parallel line</p> <p>25) <u>F</u> Perpendicular bisector</p> <p>26) <u>E</u> Perpendicular line through a point on the line</p> <p>27) <u>G</u> Perpendicular line through a point NOT on the line</p> <p>28) <u>H</u> Equilateral triangle inscribed in a circle</p>	<p>A.</p>	<p>B.</p>
<p>E.</p>	<p>F.</p>	<p>G.</p>
<p>H.</p>	<p>I.</p>	<p>J.</p>