Math 9: **Task 7 and 8: Section 7.1 – 7.4 Similarities Practice Test (Novice)** Mrs. Belliveau

Name: Answer Key

Outcome:

- **SS3:** Demonstrate an understanding of similarity of polygons.
- **SS4:** Draw and interpret scale diagrams of 2-D shapes.

$\frac{\quad}{20} = \_\_\_\_\_\%$

Instructions: Complete the following questions in the space provided. Be sure to show ALL work!

1. A photo has dimensions 12.4 cm by 8.3 cm. The photo is to be enlarged by a **scale factor of 4.5**. Calculate the dimensions of the enlargement. **(2)**

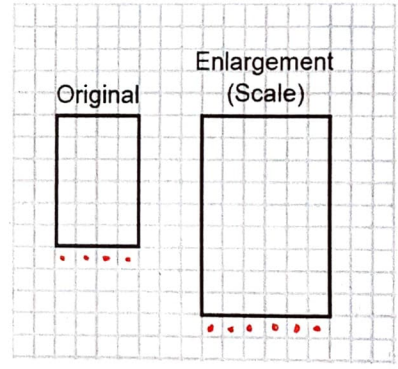
Original Dimensions	Scale factor	Enlarged (Scale) Dimensions (S = O x SF)
Length 12.4cm x	4.5	= 55.8cm
Width 8.3 cm x	4.5	= 37.35cm

2. Determine the **scale factor** of this enlargement. **(2)**

$$Scale\ Factor = \frac{Scale\ (enlargement)}{Original}$$

$= \frac{6}{4}$] widths

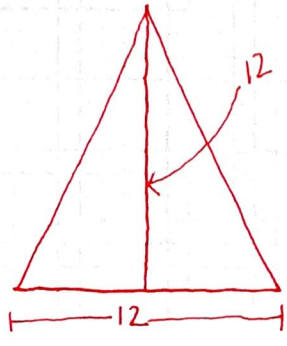
$= 1.5$



3. Draw a scale diagram of triangle shown with **scale factor of 3. (4)**

original base = 4
original height = 4

$S = SF \times O$
$= 3 \times 4$
$= 12$ ← Scale length of enlarged diagram to be drawn.



4. Determine the value of y in this proportion. **(2)**

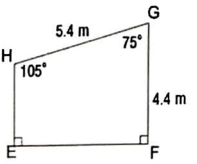
$\frac{y}{7} = \frac{9}{3}$ $9 \times 7 \div 3 = 21$

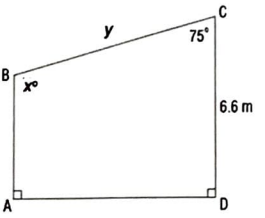
$y = 21$

5. These quadrilaterals are similar.

a) Identify the corresponding sides and angles. **(4)**

- $\overline{AB}$ = EH
- $\overline{BC}$ = HG
- $\overline{CD}$ = GF
- $\overline{DA}$ = FE
- $\angle A$ = $\angle E$
- $\angle B$ = $\angle H$
- $\angle C$ = $\angle G$
- $\angle D$ = $\angle F$





b) Determine the value of $x°$. **(1)** $x° =$ 105°

c) Determine the value of side y. **(2)**

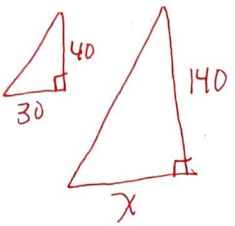
$$\frac{CB}{GH} = \frac{CD}{GF}$$

$\frac{y}{5.4} \times \frac{6.6}{4.4}$ $6.6 \times 5.4 \div 4.4 = 8.1$

$y = 8.1$

7. This scale diagram shows the measurements that a surveyor made to determine the length of Lac Lalune. What is the length of the lake? **(3)**

$$\frac{base}{base} = \frac{height}{height}$$



$\frac{x}{30} \times \frac{140}{40}$ $140 \times 30 \div 40 = 105$

$x = 105$ m