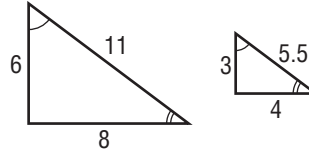


Test, Form 3A

1. The floors of houses in Japan are traditionally covered by tatami. Tatami are rectangular-shaped straw mats that measure about 6 feet by 3 feet. If a room is 48 feet by 24 feet, how many tatami are needed to cover the floor? Use the *draw a diagram* strategy.

1. 64 tatami

2. Determine whether the pair of polygons is similar using properties of similar polygons. Explain your reasoning.



similar; The corresponding angles are congruent and the corresponding sides are proportional.

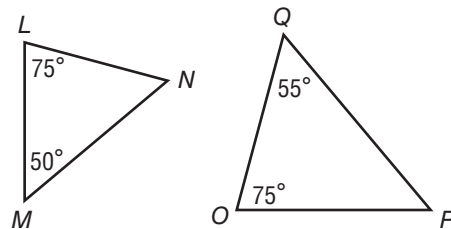
3. A road sign casts a shadow that is 4 feet long. At the same time, a 6-foot man standing next to the sign casts a shadow that is 2.4 feet long. How tall is the sign?

3. 10 ft

4. The length of a rectangle is 22 centimeters and the width is 4 centimeters. A similar rectangle has a width of 6 centimeters. What is the perimeter of the second rectangle?

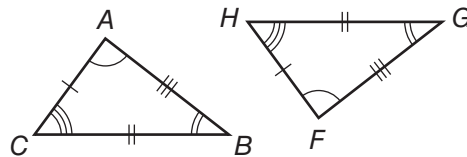
4. 78 cm

5. Determine whether the triangles are similar. If so, write a similarity statement.



similar;
5. $\triangle LMN \sim \triangle OPQ$

6. The triangles below are congruent.



- a. Write congruency statements comparing the corresponding parts.
- b. Describe a series of transformations that maps $\triangle ABC$ onto $\triangle FGH$.

$\angle A \cong \angle F$;
 $\angle B \cong \angle G$;
 $\angle C \cong \angle H$;
 $\overline{AC} \cong \overline{FH}$;
 $\overline{BC} \cong \overline{GH}$;
 $\overline{AB} \cong \overline{FG}$

6a. _____

Sample answer:
6b. reflection then translation

Test, Form 3A (continued)

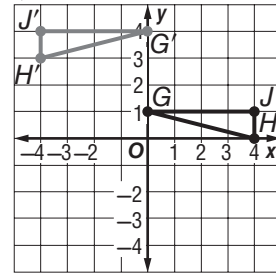
7. Triangle GHI has vertices at $(0, 1)$, $(4, 0)$, and $(4, 1)$.

a. Graph $\triangle GHI$.

b. Reflect $\triangle GHI$ over the y -axis, then translate it 3 units up. Label the vertices of the image $G'H'I'$.

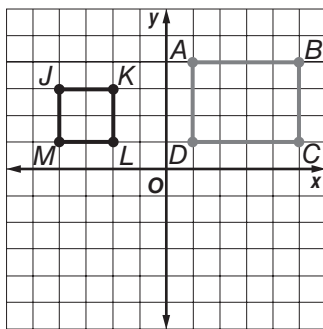
c. Are the two triangles congruent? Justify your response.

7a, b.



7c. **yes; A reflection followed by a translation will map $\triangle GHI$ onto $\triangle G'H'I'$.**

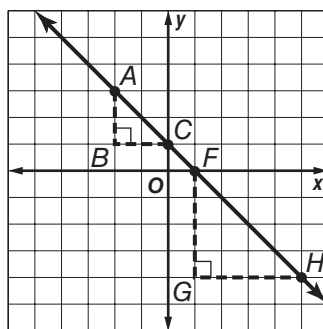
8. Determine if the two figures are similar by using transformations. Explain your reasoning.



not similar; The ratios comparing the corresponding side lengths are not equal so a dilation did not occur.

8. _____

9. Use the similar slope triangles to show that the slope of the line is the same between any two distinct points on the line.



Sample answer:

$$\frac{AB}{BC} = \frac{-2}{2} = -1$$

and

$$9. \frac{FG}{GH} = \frac{-4}{4} = -1$$

10. Two rectangles are similar. The length and width of the first rectangle is 8 meters by 6 meters. The second rectangle is similar by a scale factor 5. What is the area of the second rectangle?

10. 1,200 m²