Nepedia · Geometry

Unit 3: Similarity

PRACTICE · SET 2

Name: _____ Date: _____

Show your work and write each final answer as a single number, fraction, ratio, or coordinate pair.

1. Triangle ABC is dilated by a scale factor of 3 centered at the origin. If side AB has length 5, what is the length of the corresponding side in the image?

Answer: _____

2. A dilation centered at the origin maps the point (6, -9) to (2, -3). What is the scale factor of this dilation?

Answer: _____

3. Triangles PQR and STU are similar with PQR ~ STU. Side PQ = 8 corresponds to ST = 12. If side QR = 10, what is the length of the corresponding side TU?

Answer: _____

4. In triangle ABC, angle A = 55° and angle B = 65°. In triangle DEF, angle D = 55° and angle E = 65°. By the Angle-Angle criterion, are the triangles similar? Answer yes or no.

Answer: _____

5. A dilation centered at the origin has scale factor 4. What are the coordinates of the image of the point (-2, 3)?

Answer: _____

6. Two similar triangles have corresponding sides in the ratio 2:5. The perimeter of the smaller triangle is 14. What is the perimeter of the larger triangle?

Answer: _____

7. Triangle GHI ~ triangle JKL. If GH = 9, JK = 6, and side HI = 12, find the length of side KL.

Answer: _____

8. A segment of length 21 is dilated to an image segment of length 28. What is the scale factor, written as a fraction in simplest form?

Answer: _____

9. In two similar triangles, corresponding sides are 6 and 15. Written as a ratio in simplest form, what is the ratio of their corresponding sides?

Answer: _____

10. A 5 ft tall person casts a shadow 8 ft long. At the same time, a nearby flagpole casts a shadow 40 ft long. Using similar triangles, how tall is the flagpole in feet?

Answer: _____

11. Triangle MNO is dilated by scale factor 1/2 centered at the origin. The point M is at (10, -6). What are the coordinates of its image M'?

Answer: _____

12. Triangle ABC ~ triangle XYZ with a scale factor of 2/3 from ABC to XYZ. If side AB = 18, what is the length of the corresponding side XY?

Answer: _____