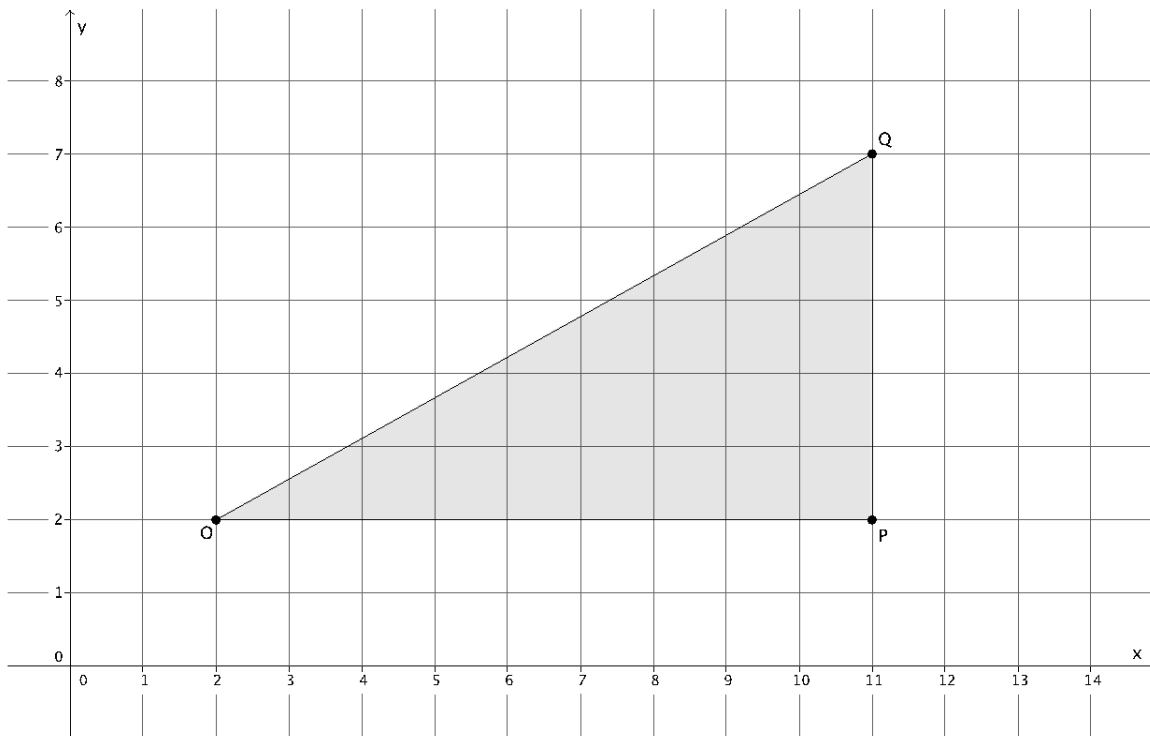


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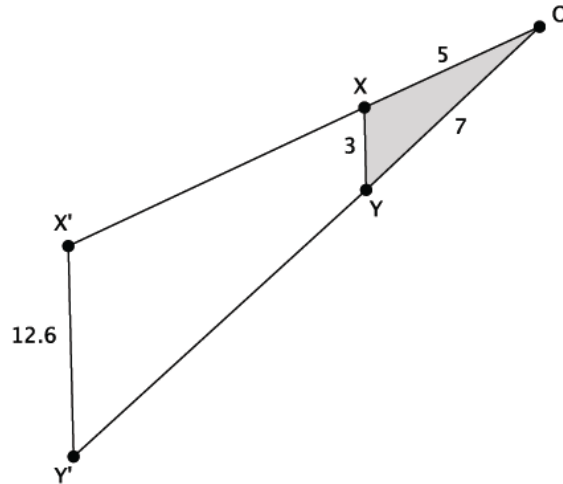
1. Use the diagram below to answer the questions that follow.



- a. Dilate triangle $\triangle OPQ$ from center O and scale factor $r = \frac{4}{9}$. Label the image $\triangle OP'Q'$.
- b. Find the coordinates of P' and Q' .

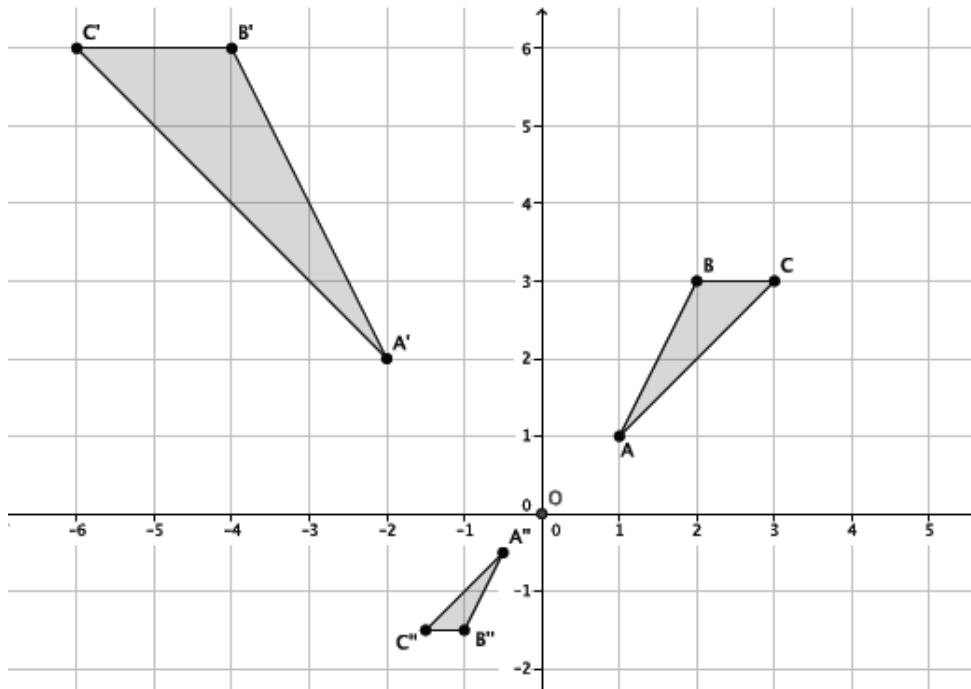
- c. Are $\angle OQP$ and $\angle OQ'P'$ equal in measure? Explain.
- d. What is the relationship between the lines PQ and $P'Q'$? Explain in terms of similar triangles.
- e. If the length of segment $|OQ| = 9.8$ units, what is the length of segment $|OQ'|$? Explain in terms of similar triangles.

2. Use the diagram below to answer the questions that follow. The length of each segment is as shown: segment OX is 5 units, segment OY is 7 units, segment XY is 3 units, and segment $X'Y'$ is 12.6 units.



- Suppose XY is parallel to $X'Y'$. Is triangle ΔOXY similar to triangle $\Delta OX'Y'$? Explain.
- What is the length of segment OX' ? Show your work.
- What is the length of segment OY' ? Show your work.

3. Given $\triangle ABC \sim \triangle A'B'C'$ and $\triangle ABC \sim \triangle A''B''C''$ in the diagram below, answer parts (a)–(c).



a. Describe the sequence that shows the similarity for $\triangle ABC$ and $\triangle A'B'C'$.

b. Describe the sequence that shows the similarity for $\triangle ABC$ and $\triangle A''B''C''$.

c. Is $\triangle A'B'C'$ similar to $\triangle A''B''C''$? How do you know?