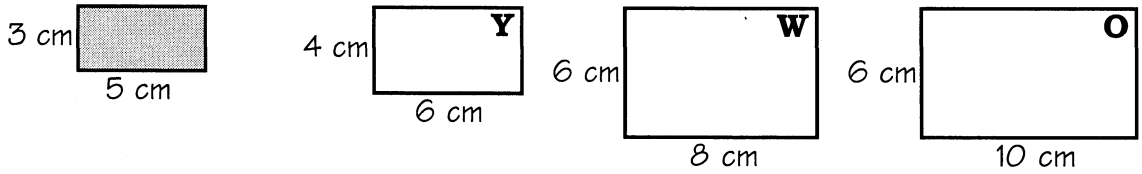
What Did King Krum Call the Royal Math and Science Teachers?

Write the letter of the best choice in each box containing the exercise number.

5	11	14	10	3	12	1	7	11	9	4	14	2	8	13	4	6	9	14

1. Which of the lettered rectangles is similar to the shaded rectangle?



2. Ms. Smudge had a 5 by 7 in. photograph enlarged. Which of these sizes is possible without cropping or distorting the photo?

M. 15 by 17 in. **U.** 15 by 21 in.

3. An 8 by 10 in. transparency is projected on a screen. Which of the following is a possible size for the enlarged image?

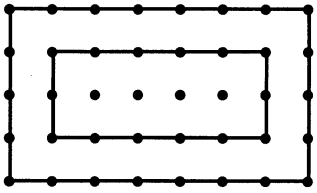
A. 4 by 5 ft **G.** 7 by 9 ft

4. The two figures drawn on dot paper at the right are:

N. Similar.

D. Not similar because corresponding angles are not congruent.

E. Not similar because corresponding sides are not proportional.

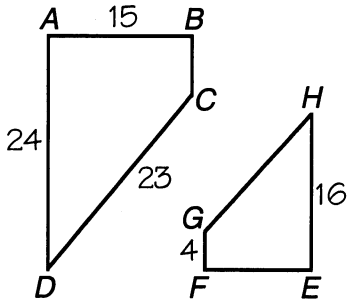


In Exercises 5-6, choose "True" or "False". (If a statement is not always true, it is false.)

5. If the angles of one quadrilateral are congruent to the angles of another quadrilateral, then the two quadrilaterals are similar. **J.** True **H.** False

6. If the angles of one triangle are congruent to the angles of another triangle, then the two triangles are similar. **C.** True **L.** False

In Exercises 7-10, trapezoids *ABCD* and *EFGH* are similar.



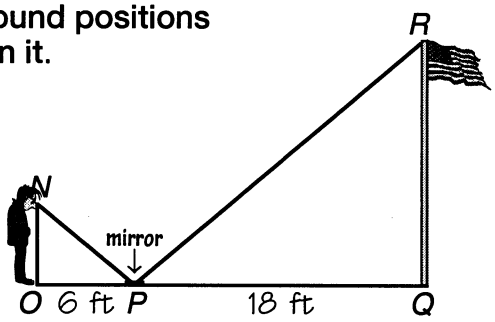
7. What is the scale factor of *ABCD* to *EFGH*? **N.** $\frac{4}{3}$ **R.** $\frac{3}{2}$

8. Which side of *EFGH* corresponds to $\overline{CD}$? **B.** $\overline{GH}$ **P.** $\overline{HE}$

9. Which side of *ABCD* corresponds to $\overline{GF}$? **K.** $\overline{AB}$ **T.** $\overline{BC}$

10. Which angle of *EFGH* corresponds to $\angle A$? **Y.** $\angle F$ **F.** $\angle E$

In Exercises 11-14, a student whose eyes are 5 ft above the ground positions a mirror on the ground at that he can see the top of a flagpole in it.



11. What is the scale factor of $\triangle NOP$ to $\triangle RQP$? **I.** $\frac{1}{3}$ **X.** $\frac{2}{5}$

12. Which angle is congruent to $\angle NPO$? **D.** $\angle R$ **V.** $\angle RPQ$

13. Complete this proportion: $\frac{OP}{PQ} = \frac{NO}{\quad}$ **J.** QR **L.** RP

14. How tall is the flagpole? **N.** 20 ft **S.** 15 ft

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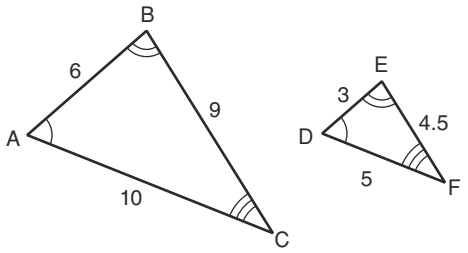
Name _____ Date _____ Class _____

LESSON 7-2

Review for Mastery

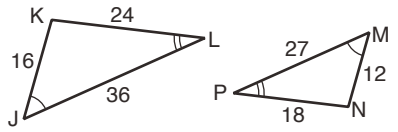
Ratios in Similar Polygons

Similar polygons are polygons that have the same shape but not necessarily the same size.

Similar Polygons	
 $\triangle ABC \sim \triangle DEF$	Corresponding angles are congruent. $\angle A \cong \angle D$ $\angle B \cong \angle E$ $\angle C \cong \angle F$ Corresponding sides are proportional. $\frac{AB}{DE} = \frac{6}{3} = 2$ $\frac{BC}{EF} = \frac{9}{4.5} = 2$ $\frac{CA}{FD} = \frac{10}{5} = 2$

A similarity ratio is the ratio of the lengths of the corresponding sides. So, for the similarity statement $\triangle ABC \sim \triangle DEF$, the similarity ratio is 2. For $\triangle DEF \sim \triangle ABC$, the similarity ratio is $\frac{1}{2}$.

Identify the pairs of congruent angles and corresponding sides.

1. 

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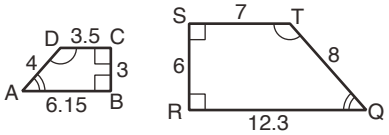
2. 

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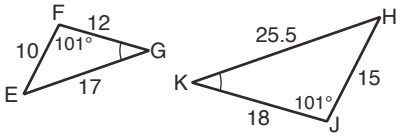
Determine whether the polygons are similar. If so, write the similarity ratio and a similarity statement.

3. $\triangle EFG$ and $\triangle HJK$



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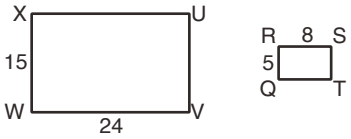
4. rectangles *QRST* and *UVWX*



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