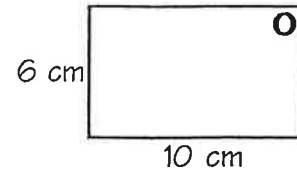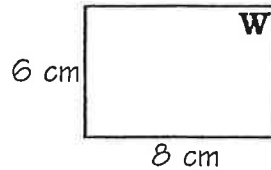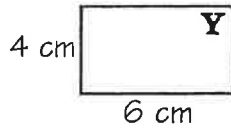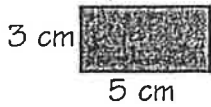# What Did King Krum Call the Royal Math and Science Teachers?

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?

3 cm   5 cm   Y 4 cm 6 cm   W 6 cm 8 cm   O 6 cm 10 cm

2. Ms. Smudge had a 5 by 7 in. photograph enlarged. Which of these sizes is possible without cropping or distorting the photo?
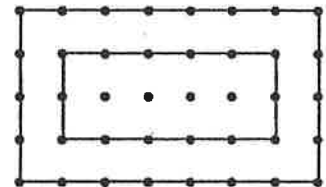
M. 15 by 17 in.   **U.** 15 by 21 in.

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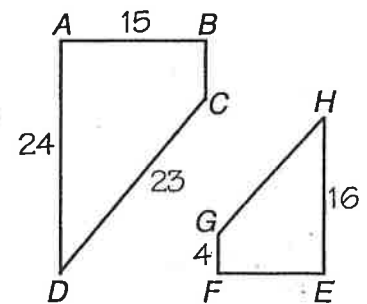
In Exercises 7-10, trapezoids ABCD and EFGH are similar.

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.** $\angle E$

A   15   B   24   23   C   H   G   4   16   D   F   E
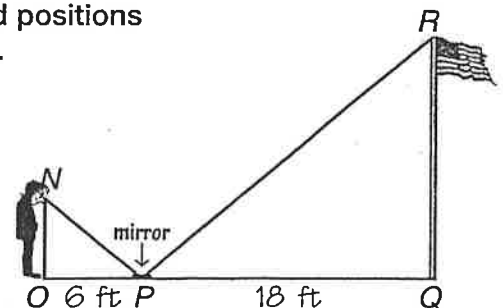
In Exercises 11-14, a student whose eyes are 5 ft above the ground positions a mirror on the ground so that he can see the top of a flagpole in it.

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: $\frac{OP}{PQ} = \frac{NO}{}$ **J.** QR   **L.** RP

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

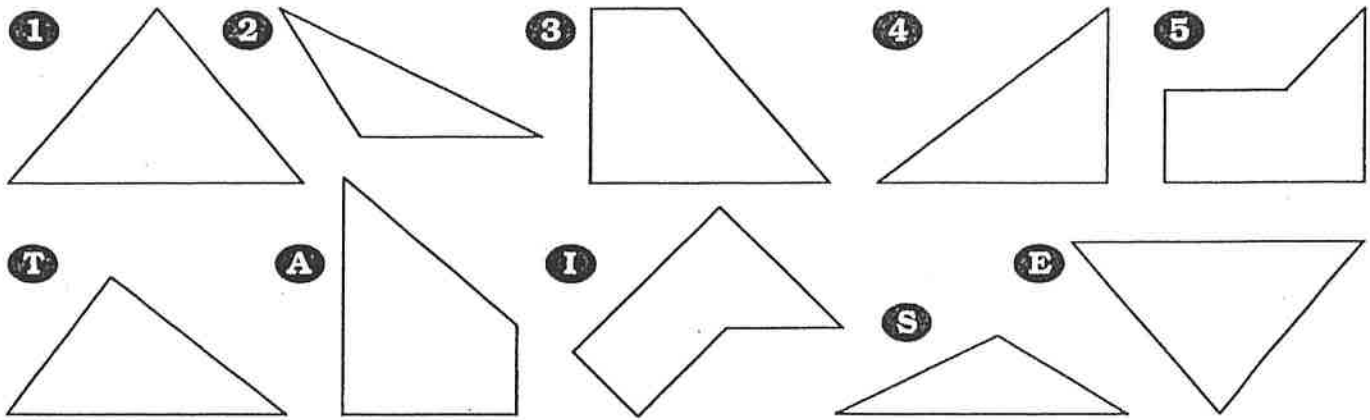R   N   mirror   O 6 ft P   18 ft   Q

When Was the 300-lb Wrestler on Television?

Each exercise will give you a number-letter pair. Write the letter in the matching numbered box at the bottom of the page.

Find pairs of congruent figures. Use the number from one figure and the letter from the other.
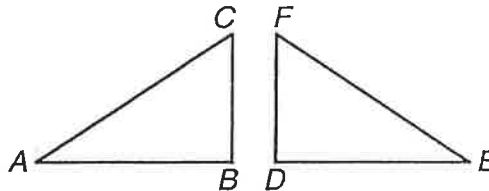
① **②** **③** **④** **⑤**

T **A** **I** **S** **E**

Complete each statement. Use the number of the exercise and the letter of the answer.

$\triangle ABC \cong \triangle EDF$

⑥ $\overline{AC} \cong$ **⑦** $\angle B \cong$
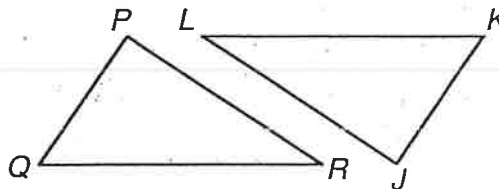
⑧ $\overline{AB} \cong$ **⑨** $\angle C \cong$

Answers 6-9

O $\overline{DE}$ **T** $\angle D$
E $\overline{EF}$ **G** $\angle E$
L $\overline{FD}$ **E** $\angle F$

$\triangle PQR \cong \triangle JKL$

⑩ $\overline{PR} \cong$ **⑪** $\angle R \cong$

⑫ $\overline{QR} \cong$ **⑬** $\angle P \cong$

Answers 10-13

Y $\overline{JK}$ **H** $\angle J$
D $\overline{KL}$ **F** $\angle K$
T $\overline{LJ}$ **E** $\angle L$

$\triangle XOW \cong \triangle ZOY$

⑭ $\overline{WO} \cong$ **⑮** $\angle W \cong$

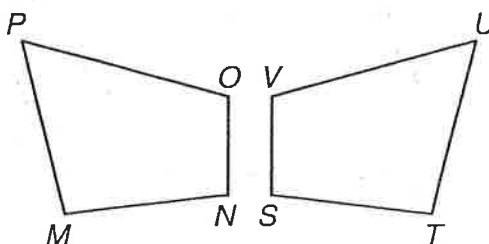**⑯** $\overline{WX} \cong$ **⑰** $\angle WOX \cong$
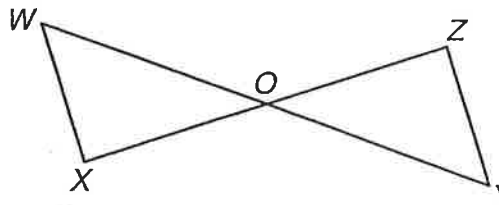
Answers 14-17

E $\overline{YZ}$ **J** $\angle Y$
X $\overline{ZO}$ **S** $\angle Z$
R $\overline{OY}$ **B** $\angle ZOY$

$MNOP \cong TSVU$

⑱ $\overline{OP} \cong$ **⑲** $\angle O \cong$

⑳ $\overline{MN} \cong$ **㉑** $\angle M \cong$

㉒ $\overline{PM} \cong$ **㉓** $\angle P \cong$

Answers 18-23

U $\overline{ST}$ **O** $\angle S$
F $\overline{TU}$ **S** $\angle T$
N $\overline{UV}$ **V** $\angle U$
T $\overline{VS}$ **C** $\angle V$

15	20	2	10	17	6	22	8	14	11	4	13	1	21	16	7	19	3	23	9	12	5	18