

NAME

My

DATE

SCORE

A Postulate for Similar Triangles

For use after Section 7-4

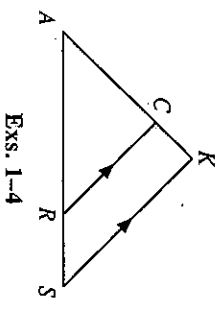
Refer to the diagram and complete.

1. $\triangle CAR \sim \triangle$ KAS

2. $\frac{CR}{KS} = \frac{?}{AK}$ CA

3. $\angle S \cong \angle$ ARC

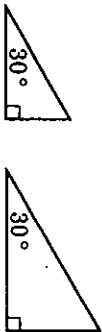
4. $\frac{SK}{RC} = \frac{AS}{?}$ AR



Exs. 1-4

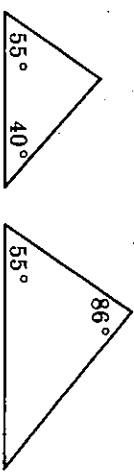
Tell whether the triangles are similar or not similar.

5.



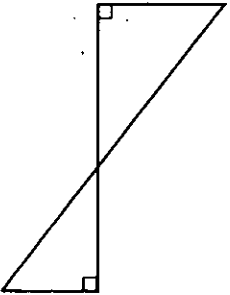
yes

6.



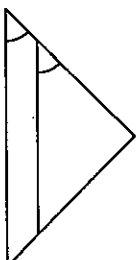
no

7.



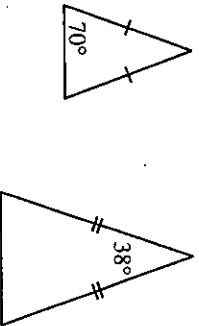
yes

8.



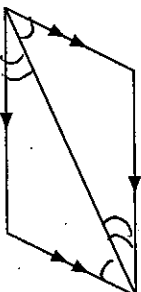
yes

9.



no

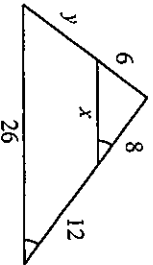
10.



yes

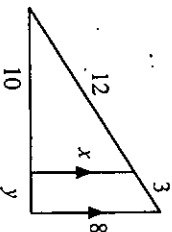
Similar triangles are shown. Find the values of x and y .

11.



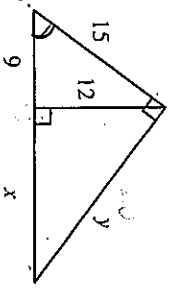
$x = \frac{52}{5}$
 $y = 9$

12.



$x = \frac{32}{5}$
 $y = \frac{5}{2}$

13.



$x = \frac{110}{20}$
 $y = \frac{110}{20}$

(2/5)

$\frac{8}{20} = \frac{6}{y+6}$
 $\frac{2}{5} = \frac{x}{20}$
 $120 = 8y + 48$
 $52 = 8y$
 $52 = 8x$
 $72 = 8y$
 $\frac{52}{5} = x$

$\frac{12}{15} = \frac{4}{5} = \frac{x}{8}$
 $\frac{4}{5} = \frac{10}{10+y}$
 $32 = 4x$
 $4y = 10$
 $y = \frac{5}{2}$

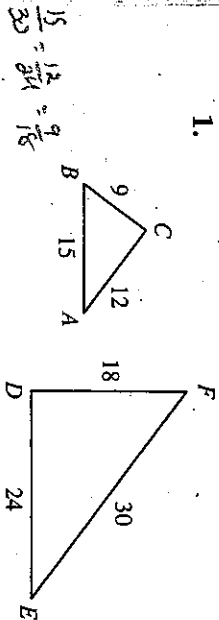
$\frac{15}{9} = \frac{12}{9+x}$
 $\frac{5}{3} = \frac{12}{9+x}$
 $5(9+x) = 36$
 $45 + 5x = 36$
 $5x = -9$
 $10 = x$

Theorems for Similar Triangles

For use after Section 7-5

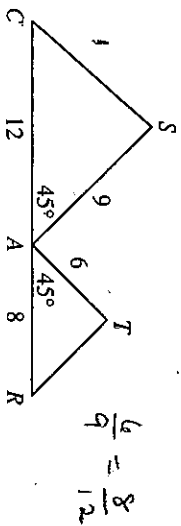
In Exercises 1-6 name two similar triangles. Also name the theorem or postulate that justifies your answer.

1.



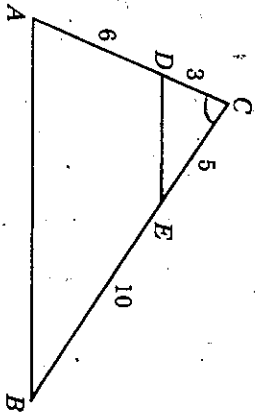
$\frac{15}{30} = \frac{12}{24} = \frac{9}{18}$
 $\triangle ABC \sim \triangle DEF$; SSS \sim Th.

2.



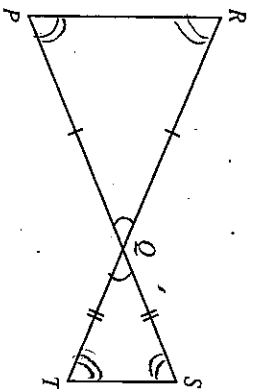
$\frac{6}{9} = \frac{8}{12}$
 $\triangle SAT \sim \triangle TAR$; SAS \sim Th.

3.



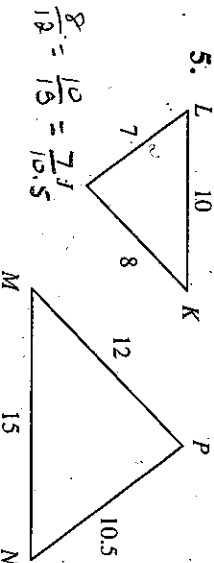
$\frac{3}{9} = \frac{5}{15}$
 $\triangle CDE \sim \triangle CAB$; SAS \sim Th.

4.



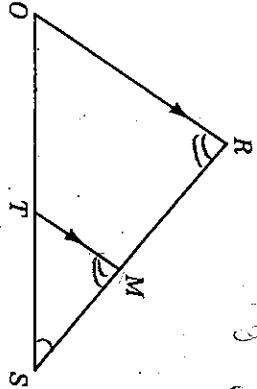
$\triangle RPO \sim \triangle SQT$; AA \sim Post. or SAS \sim T

5.



$\frac{8}{12} = \frac{10}{15} = \frac{7}{10.5}$
 $\triangle LKJ \sim \triangle MNP$; SSS \sim Th.

6.



$\frac{6}{8} = \frac{8}{20} = \frac{9}{22.5}$
 $\triangle ORS \sim \triangle MTS$; AA \sim Post.

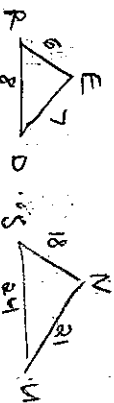
The lengths of the sides of $\triangle RED$ and $\triangle SUN$ are given.

7. $RE = 6$, $ED = 8$, $RD = 9$, $SU = 15$, $UN = 20$, $SN = 22.5$

Are the triangles similar? yes

8. $RE = 6$, $ED = 7$, $RD = 8$, $SU = 24$, $UN = 21$, $SN = 18$

a. Complete: $\triangle RED \sim \triangle$ SNU



b. What is the scale factor? $\frac{1}{3}$

9. $RE = 12$, $ED = 16$, $RD = 20$, $SU = 10$, $UN = 24$, $SN = 26$

Are the triangles similar? No

$\frac{12}{10} = \frac{16}{24} = \frac{20}{26}$

