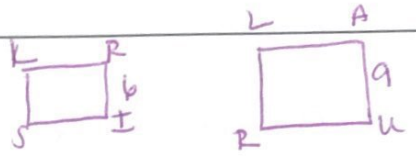
Chapter 8



- KRIS and LAUR are similar squares
  - RI = 6 and AU = 9
- Write a ratio of the side of square LAUR to it's perimeter
- Write a ratio of the perimeter of KRIS to the perimeter of LAUR

$\frac{24}{36} = \frac{2}{3}$

$\frac{9}{36} = \frac{1}{4}$

Which of these are ratios?

$\frac{15}{20} = \frac{3}{4}$

$6+g$

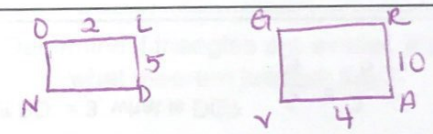
$15x$

$\frac{7}{4} = \frac{5}{x}$

$\frac{28}{12} = \frac{7}{3}$

$\frac{2}{x} = \frac{9}{13}$

Good! Now, are they simplified?



- OLDN and GRAV are similar rectangles
  - OL = 2, LD = 5, RA = 10 and AV = 4
- Write a ratio of side OL of rectangle OLDN to it's perimeter
- Write a ratio of the area of GRAV to the area of OLDN

$\frac{40}{10} = 4$

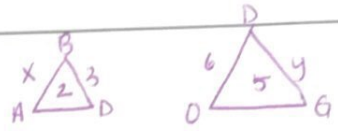
$\frac{2}{14} = \frac{1}{7}$

In similar polygons:

angles are Congruent

side lengths are proportional

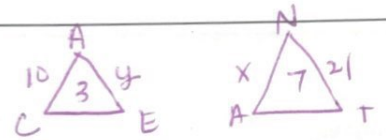
What are the 3 methods to prove triangles similar? SSS, SAS, AA



Triangle BAD and Triangle DOG are similar with a scale factor of 2:5

If DO = 6, what is BA? $\frac{x}{6} = \frac{2}{5}$ $5x = 12$ $x = 2.4$

If BD = 3, what is DG? $\frac{3}{y} = \frac{2}{5}$ $2y = 15$ $y = 7.5$



Triangle ACE and Triangle NAT are similar with a scale factor of 3:7

If AC = 10, what is NA? $\frac{10}{x} = \frac{3}{7}$ $3x = 70$ $\frac{70}{3}$ 23.3

If NT = 21, what is AE? $\frac{3}{7} = \frac{y}{21}$

$7y = 63$

$y = 9$

- Prove that Circle E centered at (-3, 0) and r = 5 is similar to Circle E' centered at (4, 3) and r = 1 using transformations

$(x, y) \rightarrow (x + 7, y + 3)$

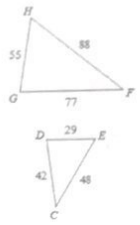
$(x, y) \rightarrow (\frac{1}{5}x, \frac{1}{5}y)$

- Prove that Circle A centered at (4, 5) and r = 2 is similar to Circle A' centered at (3, 1) and r = 3 using transformations

$(x, y) \rightarrow (x-1, y-4)$

$(x, y) \rightarrow \left(\frac{3}{2}x, \frac{3}{2}y\right)$

Determine if triangles are similar. If so, what theorem justifies this?

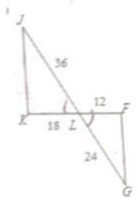


$\frac{HG}{DE} = \frac{55}{29}$

$\frac{GF}{DC} = \frac{77}{42} = \frac{11}{6}$

Not ~

Determine if triangles are similar. If so, what theorem justifies this?



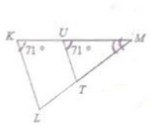
$\angle JLK \cong \angle GLF$

$\frac{JL}{GL} = \frac{36}{24} = \frac{3}{2}$

$\frac{KL}{FL} = \frac{18}{12} = \frac{3}{2}$

SAS ~

Determine if triangles are similar. If so, what theorem justifies this?

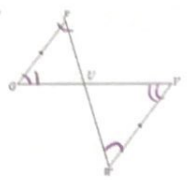


$\angle MUT \cong \angle MKL$

$\angle M \cong \angle M$

AA

Determine if triangles are similar. If so, what theorem justifies this?

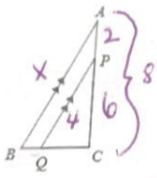


$\angle F \cong \angle W$

$\angle G \cong \angle V$

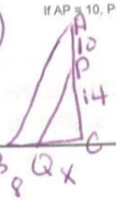
AA

If CP = 6, PA = 2, QP = 4, what is AB?



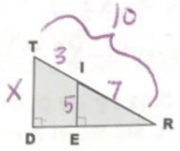
$\frac{4}{x} = \frac{6}{8}$ $\quad 6x = 32$ $\quad x = \frac{32}{6} = \frac{16}{3}$

If AP = 10, PC = 14, BQ = 8, what is QC?



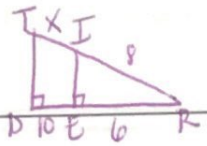
$\frac{10}{14} = \frac{8}{x}$ $\quad 10x = 112$ $\quad x = 11.2$

If RI = 7, IT = 3, IE = 5, what is DT?



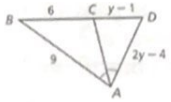
$\frac{5}{x} = \frac{7}{10}$ $\quad 7x = 50$ $\quad x = 50/7$

If RD = 16, ED = 10, RI = 8, what is IT?



$\frac{x}{8} = \frac{10}{6}$ $\quad 6x = 80$ $\quad x = \frac{80}{6} = \frac{40}{3}$

Find y



$\frac{y}{y-1} = \frac{9}{2y-4}$

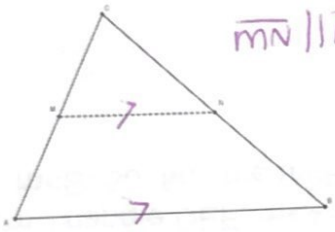
$6(2y-4) = 9(y-1)$

$12y - 24 = 9y - 9$

$3y = 15$

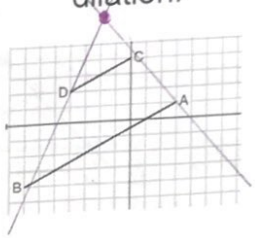
$y = 5$

What must you know about MN and AB to prove the triangles similar?

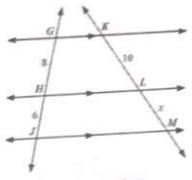


$\overline{MN} \parallel \overline{AB}$

CD is the result of a dilation of segment AB. Find the center of dilation.



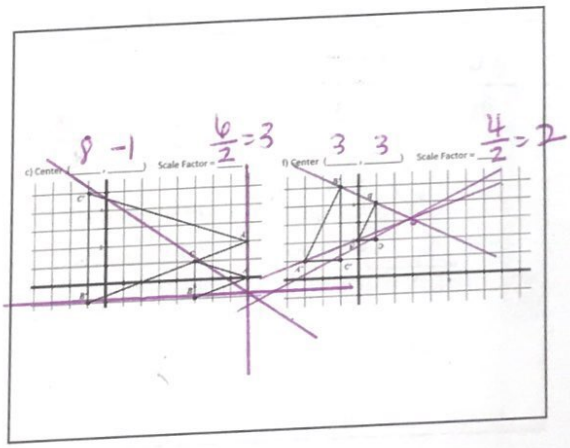
Solve for x.



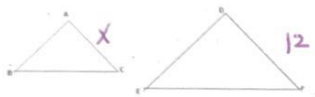
$\frac{8}{6} = \frac{10}{x}$

$8x = 60$

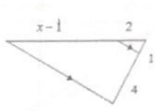
$x = \frac{15}{2} = 7.5$

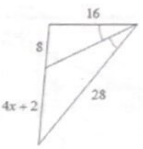


Triangle ABC is dilated by 3 to form Triangle DEF. DF=12, Find AC.



4





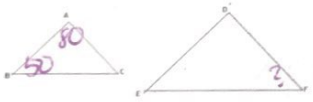
$\frac{2}{x-1} = \frac{1}{4}$

$x-1=8$

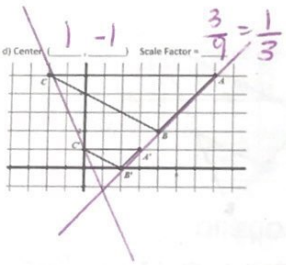
$\frac{8}{4x+2} = \frac{16}{28}$

$x=9$

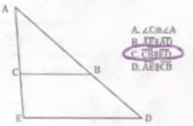
Triangle ABC is dilated by 3 to form Triangle DEF. m<A=80, m<B=50, find the m<F



$m\angle F = 50°$



31. What additional information is necessary to show $\Delta ABC \sim \Delta ADE$ by AA?



A. $\angle C \cong \angle A$
B. $\overline{CB} \cong \overline{AD}$
C. $\overline{CB} \cong \overline{ED}$
D. $\overline{AB} \cong \overline{CB}$