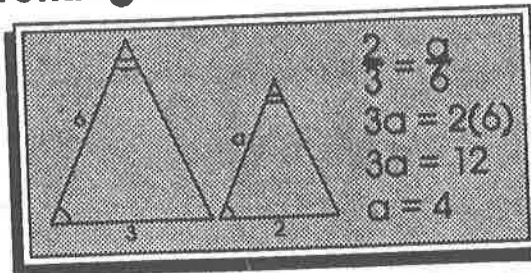


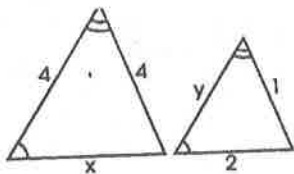
# Similar Triangles

## Working with Similar Triangles

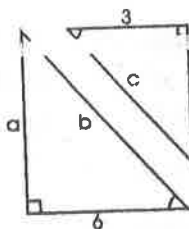


Find the labeled lengths.

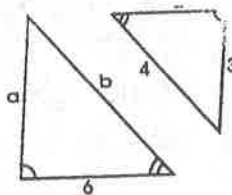
1.



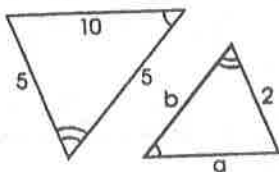
2.



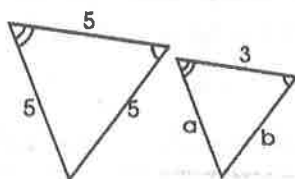
3.



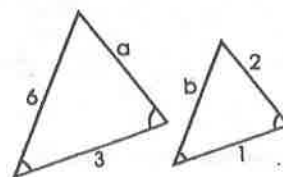
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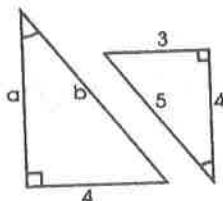
5.



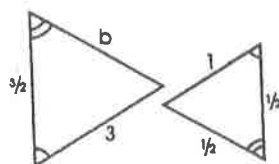
6.



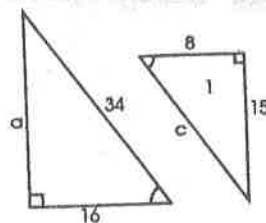
7.



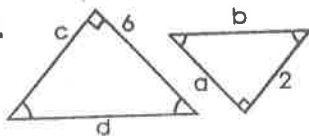
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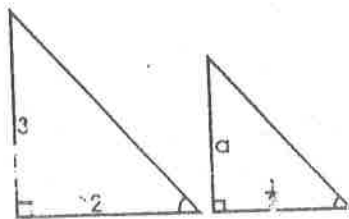
9.



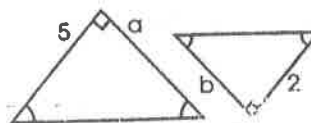
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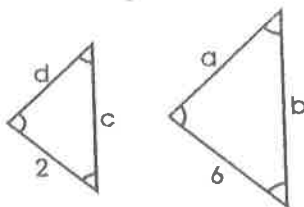
11.



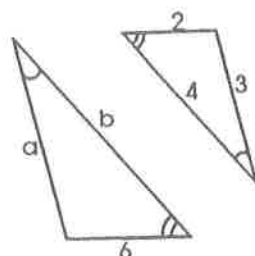
12.



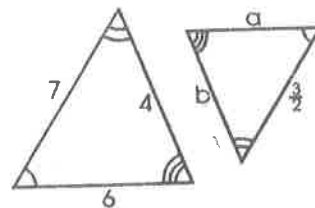
13.



14.



15.



# Similar Triangles

## Ways To Prove Triangles Similar



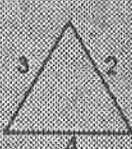
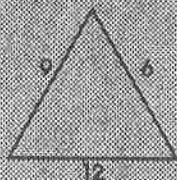
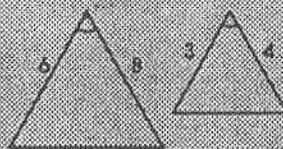
Keep in mind . . .

Every accomplishment great or small,  
starts with the right decision, "I'll try."



**AA (angle, angle) or AAA (angle, angle, angle)** = 2 or 3 angles of one triangle congruent to the corresponding angles of another triangle  $\Rightarrow \sim \Delta s$  (corresponding sides are proportional).

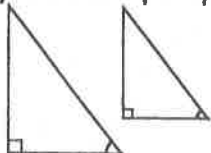
**SAS (side, angle, side)** = two sides of one triangle are proportional to the corresponding sides of another triangle and the included angles are congruent  $\Rightarrow \sim \Delta s$ .



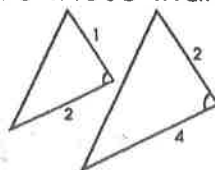
**SSS (side, side, side)** = three sides of one triangle are proportional to the corresponding sides of another triangle  $\Rightarrow \sim \Delta s$ .

Identify which property will prove these triangles similar.

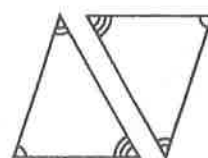
1.



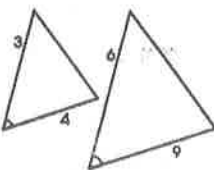
2.



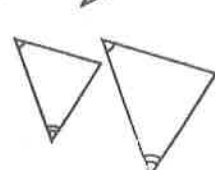
3.



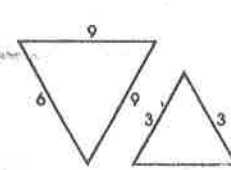
4.



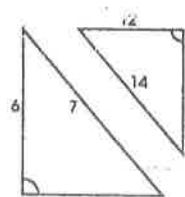
5.



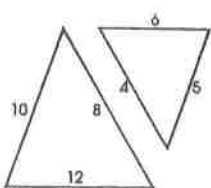
6.



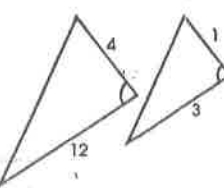
7.



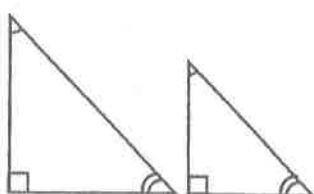
8.



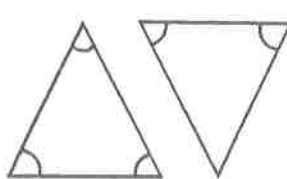
9.



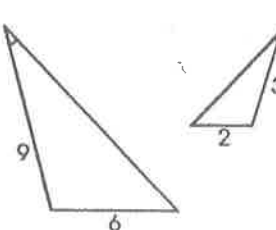
10.

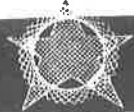


11.



12.

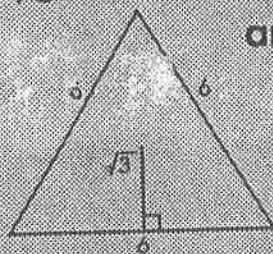




# Polygonal Regions

## Regular Polygons

A **regular polygon** is a convex polygon with all sides congruent and all angles congruent.  
**apothem (a)** = distance from the center of the polygon to a side



$$\text{area} = \frac{1}{2} ap \text{ where } p = \text{perimeter}$$

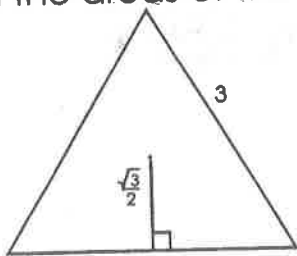
$$A = \frac{1}{2} (\sqrt{3}) (6 + 6 + 6)$$

$$= \frac{1}{2} (\sqrt{3}) (18)$$

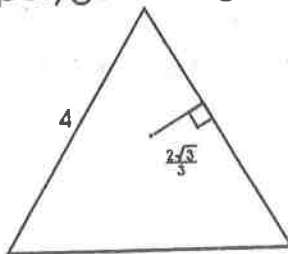
$$A = 9\sqrt{3} \text{ square units}$$

Find the areas of the regular polygonal regions below.

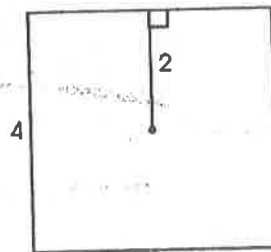
1.



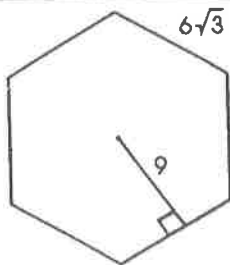
2.



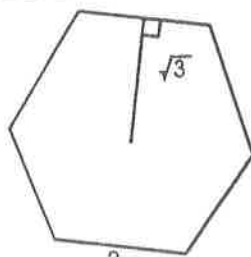
3.



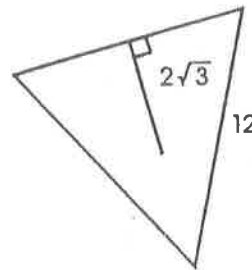
4.



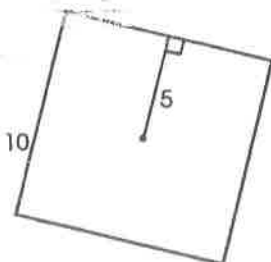
5.



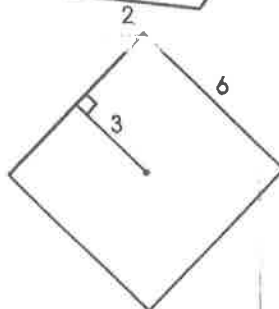
6.



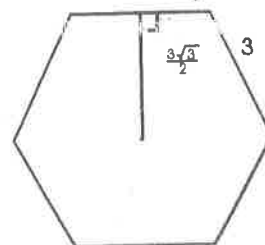
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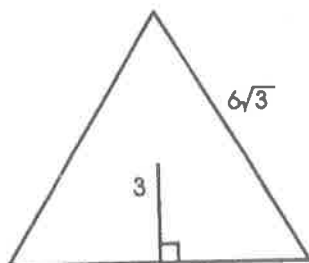
8.



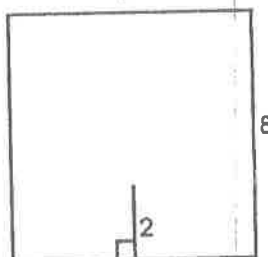
9.



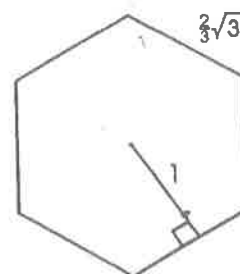
10.



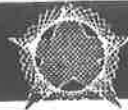
11.




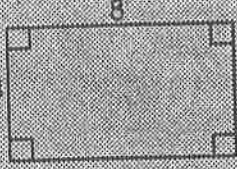


12.



# Polygonal Regions



## Area

 <p> <math>A = \frac{1}{2} (3) (6)</math>  <math>A = 9</math> square units         </p>	 <p> <math>A = (4) (8)</math>  <math>A = 32</math> square units         </p>
 <p> <math>A = \frac{1}{2} (5) (6 + 10)</math>  <math>A = 40</math> square units         </p>	 <p> <math>A = (4) (5)</math>  <math>A = 20</math> square units         </p>

Find the areas of the polygonal regions below.

