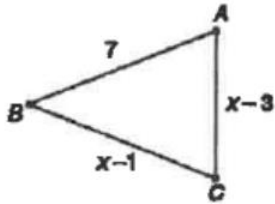
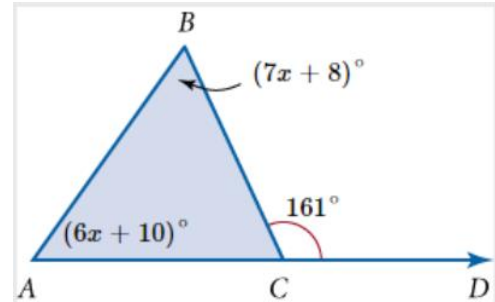


1. Given:  $\overline{AB} \cong \overline{BC}$



- A. Solve for  $x$ .  
 B. Is the triangle equilateral?

- 2.



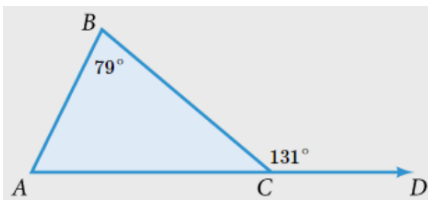
$x =$

$m\angle CAB:$    $^\circ$

$m\angle ACB:$    $^\circ$

$m\angle ABC:$    $^\circ$

- 3.

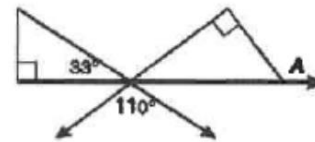


$m\angle BAC:$    $^\circ$

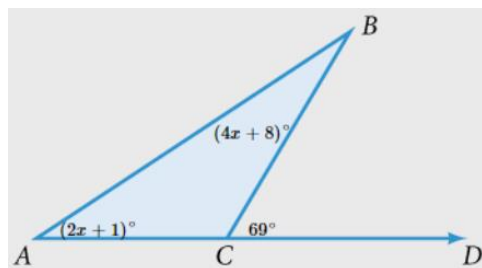
$m\angle BCA:$    $^\circ$

- 4.

Find the measure of exterior angle  $A$ .



- 5.



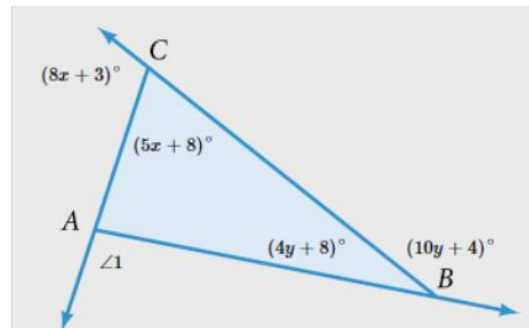
$x =$

$m\angle CAB:$    $^\circ$

$m\angle ACB:$    $^\circ$

$m\angle ABC:$    $^\circ$

- 6.



$x =$

$y =$

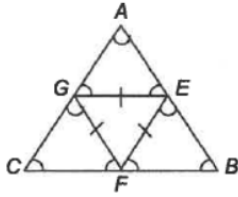
$m\angle BCA =$    $^\circ$

$m\angle CBA =$    $^\circ$

$m\angle BAC =$    $^\circ$

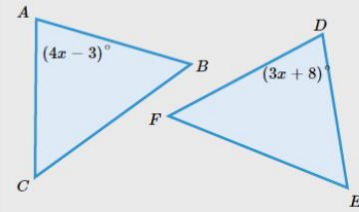
$m\angle 1 =$    $^\circ$

7. The perimeter of  $\triangle ABC$  is 30. What is the measure of  $\overline{EF}$ ?



- 8.

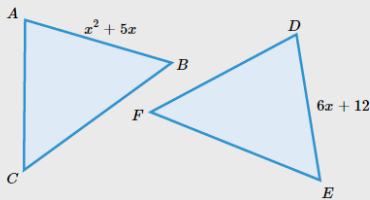
$\triangle ABC$  is congruent to  $\triangle DEF$ . Find  $x$  and then  $m\angle CAB$  and  $m\angle FDE$ .



Note: Always make sure the value of  $x$  produces positive angles.

$x =$  °  
 $m\angle CAB =$  °  
 $m\angle FDE =$  °

9.  $\triangle ABC$  is congruent to  $\triangle DEF$ . Find  $x$  and then  $\overline{AB}$  and  $\overline{DE}$ .

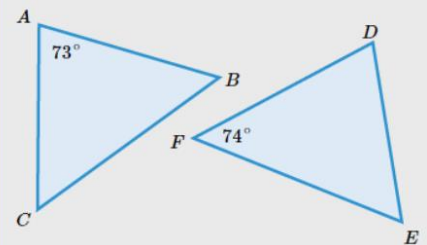


Note: Solving a quadratic equation will result in two possible answers. Always make sure the value of  $x$  produces positive lengths.

$x =$    
 $\overline{AB} =$    
 $\overline{DE} =$

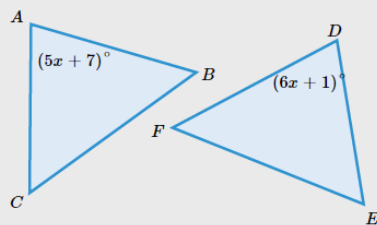
- 10.

$\triangle ABC$  is congruent to  $\triangle DEF$ . Find  $m\angle DEF$ .



$m\angle DEF =$  °

11.  $\triangle ABC$  is congruent to  $\triangle DEF$ . Find  $x$  and then  $m\angle CAB$  and  $m\angle FDE$ .

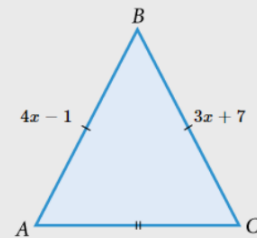


Note: Always make sure the value of  $x$  produces positive angles.

$x =$  °  
 $m\angle CAB =$  °  
 $m\angle FDE =$  °

- 12.

Find  $x$  and then  $\overline{AB}$  and  $\overline{BC}$ .

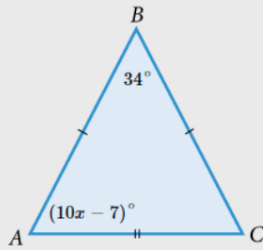


Note: Always make sure the value of  $x$  produces positive lengths.

$x =$    
 $\overline{AB} =$    
 $\overline{BC} =$

13.

Find  $x$  and then  $m\angle BAC$  and  $m\angle BCA$ .



**Note:** Always make sure the value of  $x$  produces positive angles.

$x =$

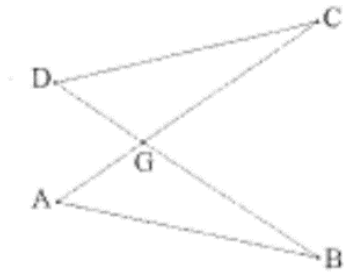
$m\angle BAC =$    $^\circ$

$m\angle BCA =$    $^\circ$

14.

Given:  $\overline{GC} \cong \overline{GB}$ ;  $\angle C \cong \angle B$

Prove:  $\overline{AG} \cong \overline{DG}$



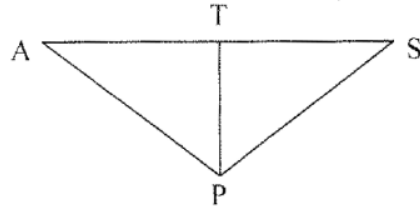
15.

9. Given:  $\overline{TP} \perp \overline{AS}$ ,  $\overline{AP} \cong \overline{SP}$

Prove:  $\triangle ATP \cong \triangle STP$

statements

1.  $\overline{TP} \perp \overline{AS}$ ,  $\overline{AP} \cong \overline{SP}$
2.  $\angle ATP$  and  $\angle STP$  are right angles
3.  $\triangle ATP$  and  $\triangle STP$  are right triangles
4.  $\overline{TP} \cong \overline{TP}$
5.  $\triangle ATP \cong \triangle STP$



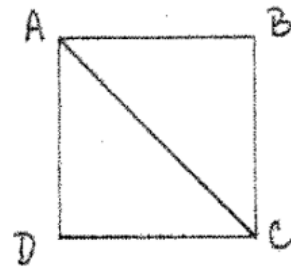
reasons

- 1.
- 2.
- 3.
- 4.
- 5.

16.

Given:  $\angle D$  and  $\angle B$  are right angles,  $\overline{AD} \cong \overline{CB}$

Prove:  $\triangle ABC \cong \triangle CDA$



17. The measure of each base angle of an isosceles triangle is seven times the measure of the vertex angle. Find the measure of each angle of the triangle.

18. The measure of each of the congruent angles of an isosceles triangle is  $9^\circ$  less than 4 times the vertex angle. Find the measure of each angle of the triangle.

19. The vertex angle of an isosceles triangle is  $80^\circ$  in measure. What is the measure of an exterior angle to one of the base angles of the triangle?