

Part 1 - Polygons Review

1) Answer the following questions about a regular decagon.

- a) How many sides does the polygon have? \_\_\_\_\_
- b) What is the sum of the measures of the interior angles? \_\_\_\_\_
- c) What is the measure of each interior angles? \_\_\_\_\_
- d) What is the sum of the measures of the exterior angles? \_\_\_\_\_
- e) What is the measure of each exterior angle? \_\_\_\_\_
- f) How many diagonals can be drawn in the polygon? \_\_\_\_\_

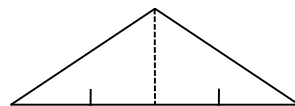
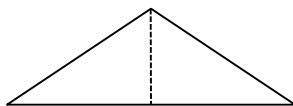
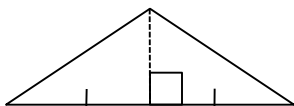
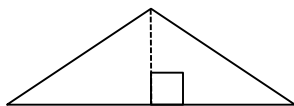
2) Each exterior angle of a regular polygon is 90. Answer each question about the polygon.

- a) What is the sum of the exterior angles? \_\_\_\_\_
- b) How many sides does the polygon have? \_\_\_\_\_
- c) What is the name of the polygon? \_\_\_\_\_
- d) What is the sum of the measures of the interior angles? \_\_\_\_\_
- e) What is the measure of each interior angle? \_\_\_\_\_
- f) How many diagonals can be drawn in the polygon? \_\_\_\_\_

3) The sum of the interior angles of a regular polygon is 540. Answer each question about the polygon.

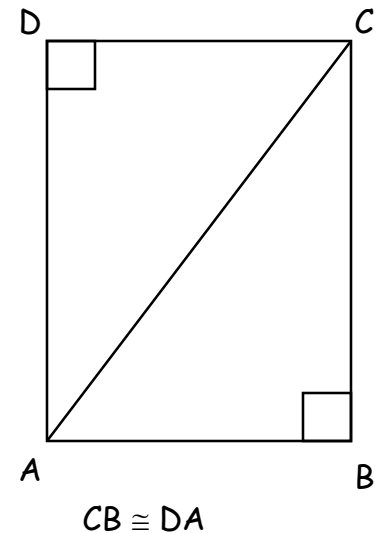
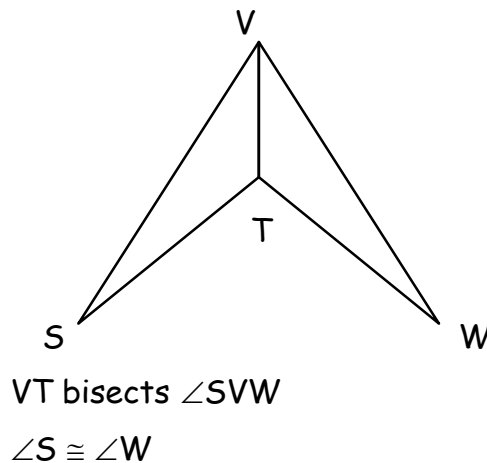
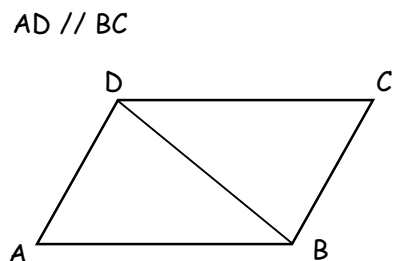
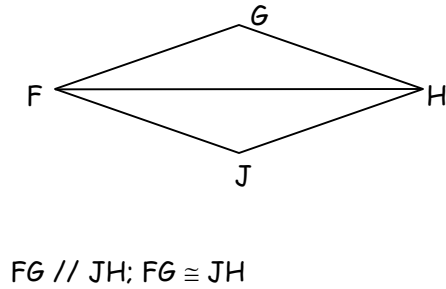
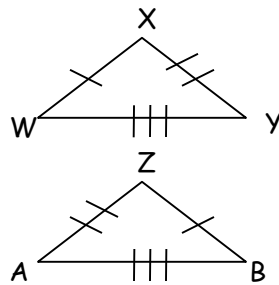
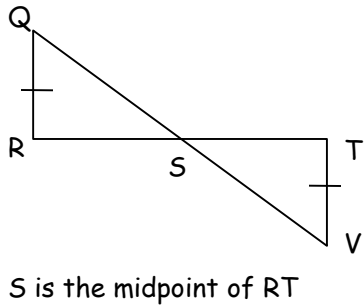
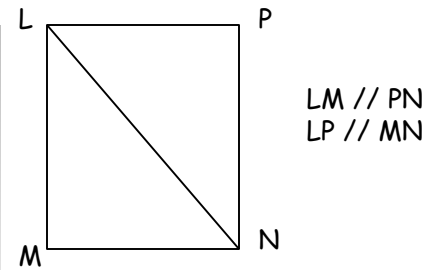
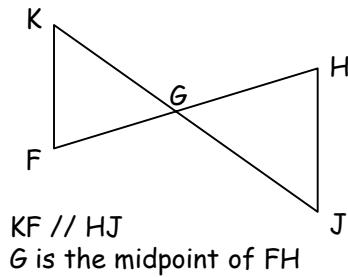
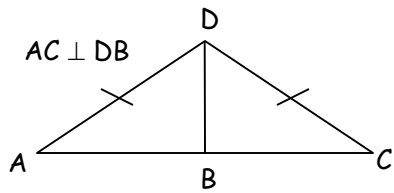
- a) How many sides does the polygon have? \_\_\_\_\_
- b) What is the name of the polygon? \_\_\_\_\_
- c) What is the measure of each interior angle? \_\_\_\_\_
- d) What is the sum of the measures of the exterior angles? \_\_\_\_\_
- e) What is the measure of each exterior angle? \_\_\_\_\_
- f) How many diagonals can be drawn in the polygon? \_\_\_\_\_

Part 2 - Segments in Triangles - Give the most specific name for each dotted segment.

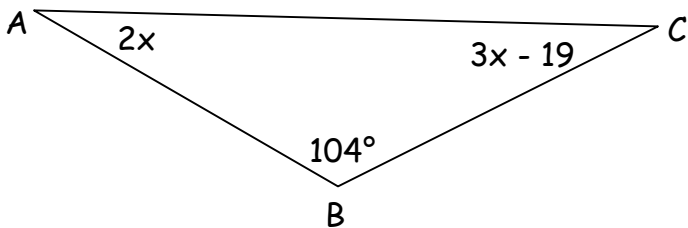


\_\_\_\_\_

Part 3 - Determine whether the triangles are congruent. If they are, name the congruent triangles and the postulate or theorem you used. If there is not enough information, write none. Mark your diagrams.



1.



$x =$  \_\_\_\_\_

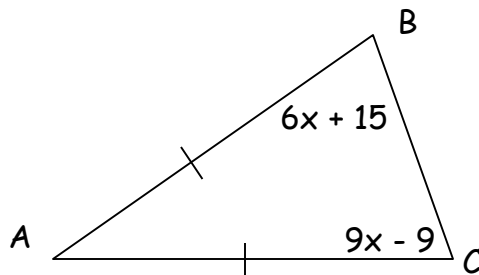
$m\angle A =$  \_\_\_\_\_

$m\angle C =$  \_\_\_\_\_

Classify the  $\Delta$  by its sides: \_\_\_\_\_

Classify the  $\Delta$  by its angles: \_\_\_\_\_

2.



Classify the triangle by its sides: \_\_\_\_\_

What two sides are congruent? \_\_\_\_\_

What two angles are congruent? \_\_\_\_\_

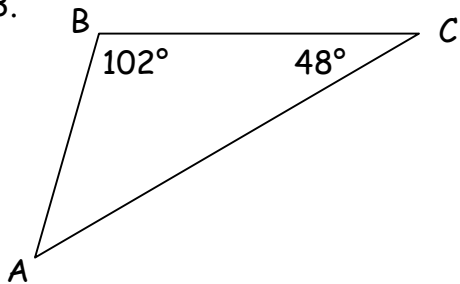
$x =$  \_\_\_\_\_

$m\angle B =$  \_\_\_\_\_

$m\angle C =$  \_\_\_\_\_

$m\angle A =$  \_\_\_\_\_

3.



$m\angle A =$  \_\_\_\_\_

Are any of the angles congruent? \_\_\_\_\_

Therefore, are any of the sides congruent? \_\_\_\_\_

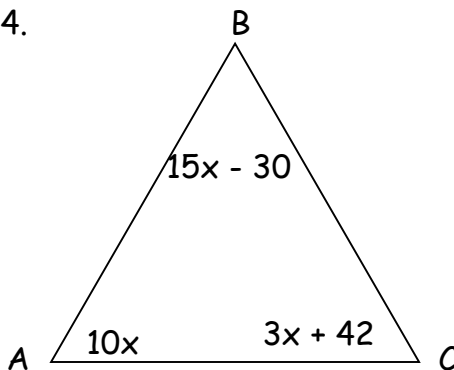
Classify the triangle by its sides: \_\_\_\_\_

Classify the triangle by its angles: \_\_\_\_\_

Order the side lengths from longest to shortest:

Longest: \_\_\_\_\_ Middle: \_\_\_\_\_ Shortest: \_\_\_\_\_

4.



$x =$  \_\_\_\_\_

$m\angle A =$  \_\_\_\_\_

$m\angle B =$  \_\_\_\_\_

$m\angle C =$  \_\_\_\_\_

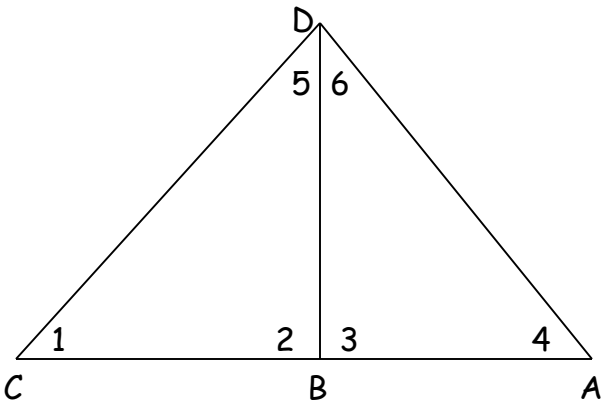
Classify the  $\Delta$  by its sides: \_\_\_\_\_

Classify the  $\Delta$  by its angles: \_\_\_\_\_

Given: B is the midpoint of CA;

$DC \cong DA$

Prove:  $\angle 5 \cong \angle 6$

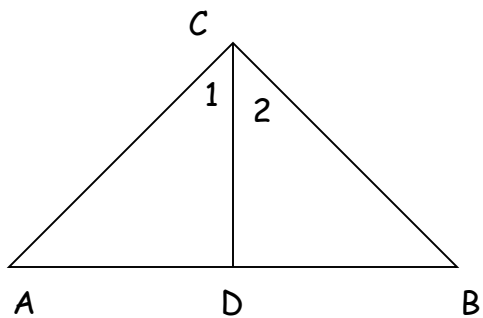


Statements

Reasons

Statements

Reasons



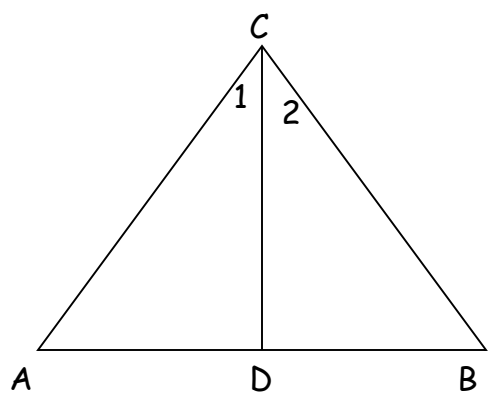
Given: D is the midpoint of AB;

$CA \cong CB$

Prove: CD bisects  $\angle ACB$

# OPTIONAL

Statements	Reasons



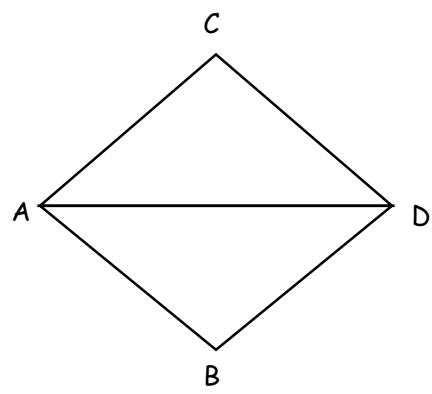
Given:  $CD$  is a median of  $\triangle CAB$   
 $CD \perp AB$

Prove:  $\angle 1 \cong \angle 2$

Statements	Reasons

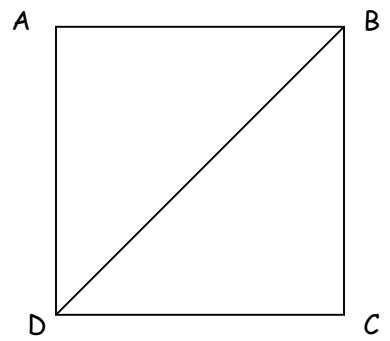
Given:  $AC \cong DB$ ;  $\angle CAD \cong \angle BDA$

Prove:  $CD \cong BA$



Statements

Reasons



Given:  $AB \parallel DC$ ;

$AB \cong DC$

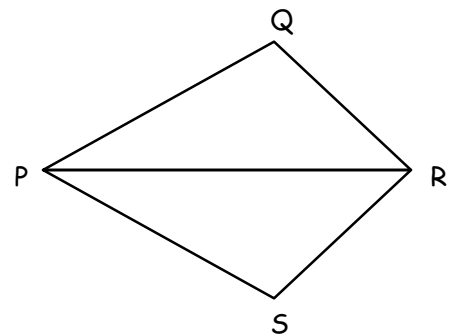
Prove:  $AD \parallel BC$

Statements

Reasons

Given: PR bisects  $\angle QPS$  and  $\angle QRS$

Prove:  $RQ \cong RS$



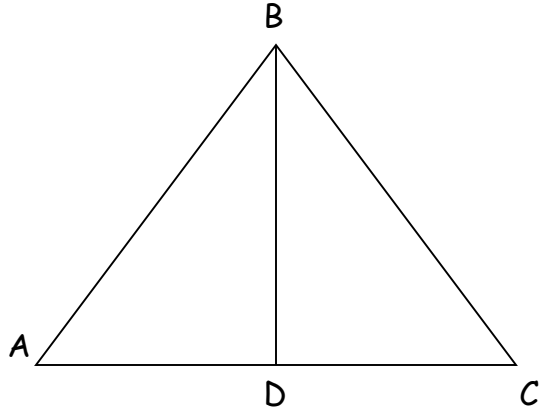
# OPTIONAL

Statements	Reasons

Given:  $BD$  is an altitude of  $\triangle ABC$

$AB \cong CB$

Prove:  $BD$  bisects  $\angle ABC$



Statements	Reasons

Given:  $\angle C$  &  $\angle D$  are right angles;  $AD \cong BC$

Prove:  $\triangle BAD \cong \triangle ABC$

