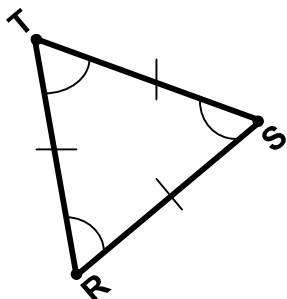


# Angle, Triangle, and Quadrilateral Identification Exercise B

Use the illustrations in each diagram to classify the triangle or quadrilateral. List the properties that you used to classify each triangle and quadrilateral. You might not use all the blanks shown.

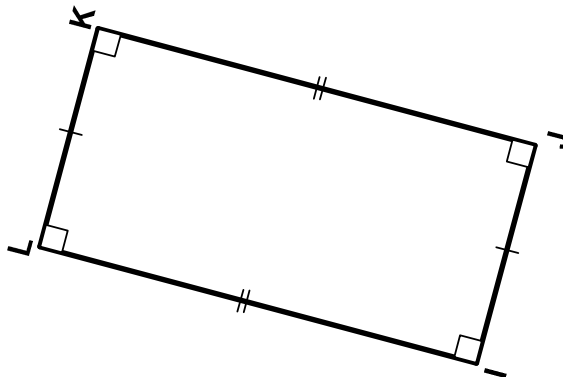
1. Type of Triangle: \_\_\_\_\_



Properties

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_

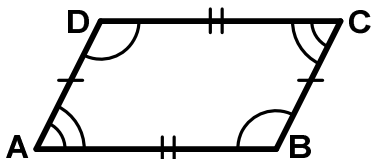
2. Type of Quadrilateral: \_\_\_\_\_



Properties

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_

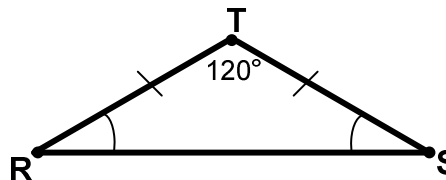
3. Type of Quadrilateral: \_\_\_\_\_



Properties

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_

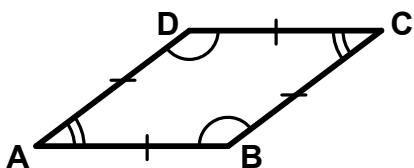
4. Type of Triangle: \_\_\_\_\_



Properties

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_

5. Type of Quadrilateral: \_\_\_\_\_



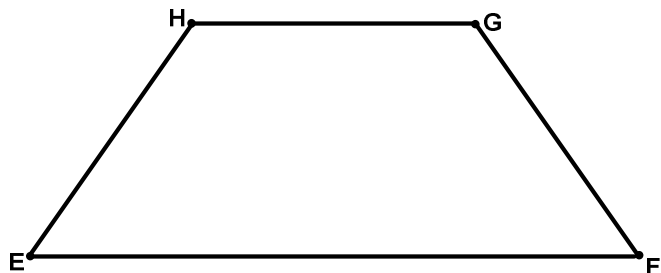
Properties:

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

## Angle, Triangle, and Quadrilateral Identification

Use the given information for each triangle or quadrilateral and the sum of the angles in triangles and quadrilaterals to circle all the names that apply to the triangle or quadrilateral. Use the appropriate symbols to illustrate the given information on each triangle and quadrilateral.

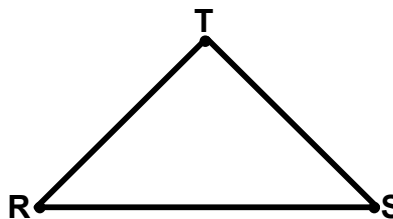
6.  $\overline{HG} \parallel \overline{EF}$  and  $\overline{EH} \cong \overline{FG}$



Circle all the names that apply:

- |                     |                       |
|---------------------|-----------------------|
| Quadrilateral       | Parallelogram         |
| Rectangle           | Rhombus               |
| Square              | Trapezoid             |
| Isosceles Trapezoid | Right Angle Trapezoid |
| Kite                | Isosceles Triangle    |

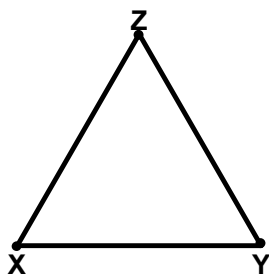
7.  $\angle TRS \cong \angle TSR$  and  $\overline{RT} \cong \overline{ST}$  and  $m\angle RTS = 90^\circ$



Circle all the names that apply:

- |             |               |
|-------------|---------------|
| Triangle    | Quadrilateral |
| Scalene     | Acute         |
| Isosceles   | Right         |
| Equilateral | Obtuse        |

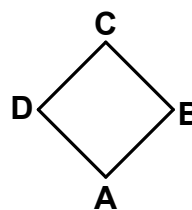
8.  $\angle ZXY \cong \angle ZYX$  and  $\overline{XZ} \cong \overline{YZ} \cong \overline{XY}$  and  $m\angle XZY = 60^\circ$



Circle all the names that apply:

- |             |               |
|-------------|---------------|
| Triangle    | Quadrilateral |
| Scalene     | Acute         |
| Isosceles   | Right         |
| Equilateral | Obtuse        |

9.  $\angle A \cong \angle B \cong \angle C$  and  $m\angle D = 90^\circ$   
 $\overline{AB} \cong \overline{BC} \cong \overline{CD} \cong \overline{DA}$



Circle all the names that apply:

- |                     |                       |
|---------------------|-----------------------|
| Quadrilateral       | Parallelogram         |
| Rectangle           | Rhombus               |
| Square              | Trapezoid             |
| Isosceles Trapezoid | Right Angle Trapezoid |
| Kite                | Equilateral Triangle  |

## Angle, Triangle, and Quadrilateral Identification

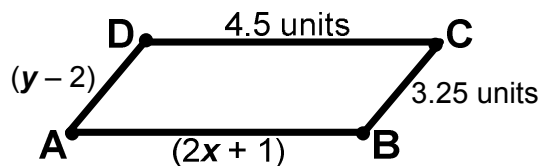
Use properties of triangles and quadrilaterals and the given information for each triangle and quadrilateral to work the problems.

10. Parallelogram **ABCD**.

Find the value of  $x$ .

Find the value of  $y$ .

Find the perimeter of parallelogram **ABCD**.



Solve for  $x$ :

Solve for  $y$ :

Calculate the perimeter:

11. Isosceles triangle **RST**.  $m\angle R = (3x + 3)^\circ$ .

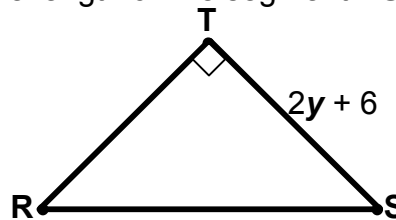
The perimeter of triangle **RST** is 17.1 units.

The length of line segment **RT** is 5 units.

Find the value of  $x$ .

Find the value of  $y$ .

Find the length of line segment **RS**.



Solve for  $x$ :

Solve for  $y$ :

Calculate the length of line segment **RS**:

12. Use the properties of the given figures to place the names of the figures in the Venn diagram at the right.

Rhombus

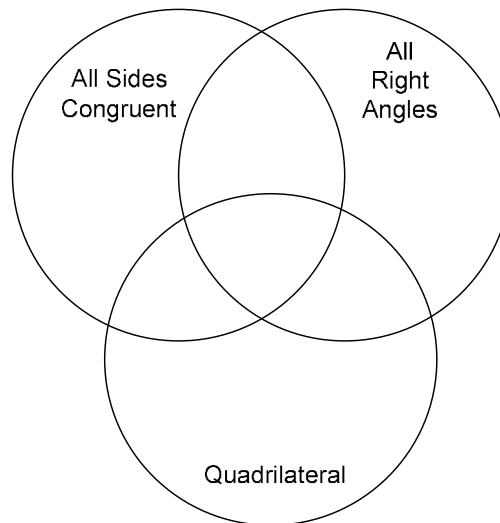
Right Trapezoid

Isosceles Trapezoid

Rectangle

Square

Equilateral Triangle



## Angle, Triangle, and Quadrilateral Identification

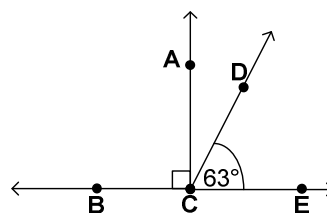
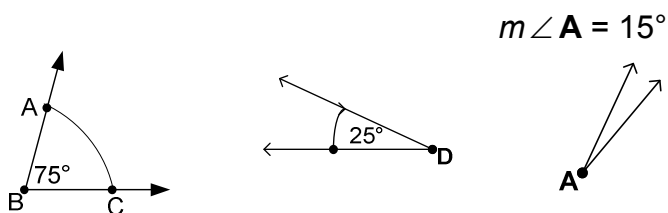
Use the definitions for complementary and supplementary angles to work each problem.

13. If  $\angle A$  and  $\angle B$  are complementary and  $m\angle A = 15^\circ$ , what is the measure of  $\angle B$ ? Justify your response.

14. If  $\angle X$  and  $\angle Y$  are supplementary and  $m\angle Y = 15^\circ$ , what is the measure of  $\angle X$ ? Justify your response.

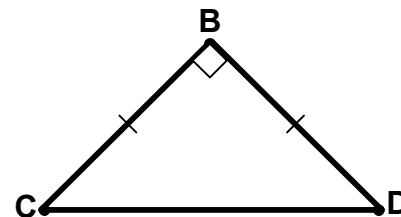
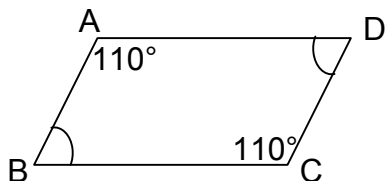
15. List 2 angles that are **not** complementary. Justify your response.

16. List 2 angles that are **not** supplementary. Justify your response.



17. List all the pairs of angles that are supplementary in parallelogram ABCD. Justify your response.

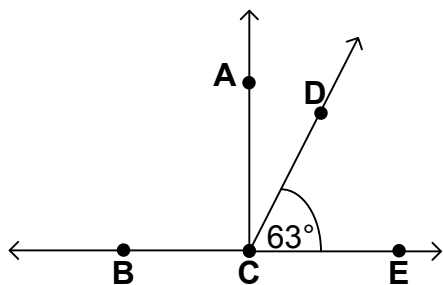
18. Which two characteristics describe  $\angle C$  and  $\angle D$  in the triangle shown below?



- F Supplementary and acute
- G Supplementary and obtuse
- H Complementary and congruent
- J Complementary and right

Use the figure below to answer 19 and 20.

19.  $\angle ACD$  and  $\angle DCE$  are complementary. If  $m\angle ACD = 3y$ , what is the value of  $y$ ?

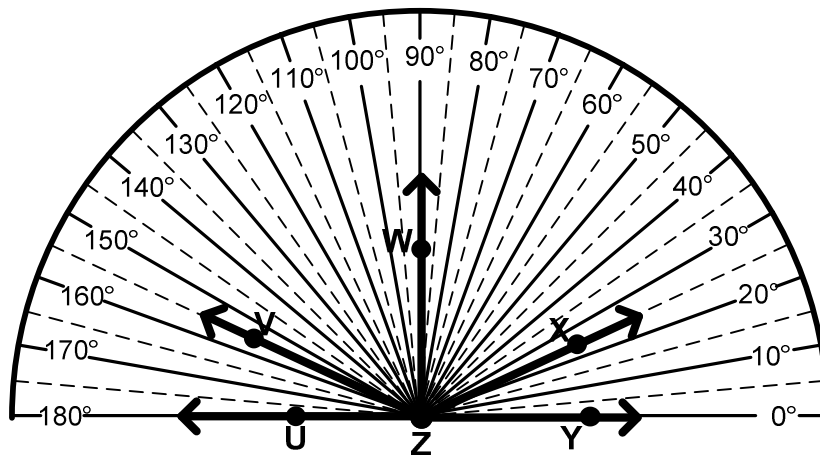


20.  $\angle BCD$  and  $\angle DCE$  are supplementary. If  $m\angle BCD = 2x$ , what is the value of  $x$ ?

## Angle, Triangle, and Quadrilateral Identification

Use the definitions for complementary and supplementary angles to work each problem.

Use the figure below to answer 21 through 25.



21. Name all the acute angles. Give the measure for each angle.

22. Name all the angles that are right angles. Give the measure for each angle.

23. Name all the angles that are obtuse angles. Give the measure for each angle.

24. Name all the complementary angles in the above figure. Justify your response.

25. Name all the supplementary angles in the above figure. Justify your response.