



Getting Started

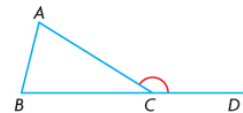
WHAT DO You Think?

Decide whether you agree or disagree with each statement. Explain your decision.

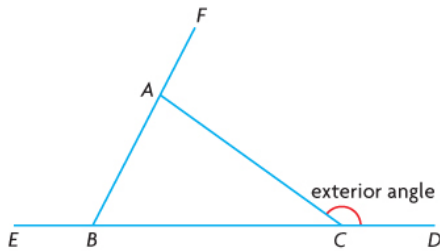
1. There is a specific relationship between parallel lines and the angles formed by these lines and other lines that intersect them.
2. The sum of the measures of the interior angles of a triangle is 180° , so the sum of the measures of the **exterior angles** around a triangle is also 180° .

exterior angle of a polygon

The angle that is formed by a side of a polygon and the extension of an adjacent side.

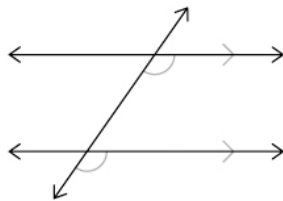


$\angle ACD$ is an exterior angle of $\triangle ABC$.

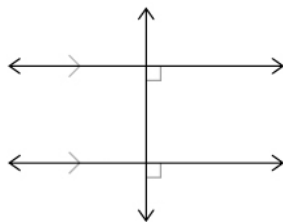


Sample Answers

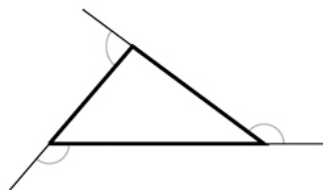
1. Agree. Answers will vary, e.g., since the lines are parallel, any line that intersects them will intersect both parallel lines at the same angle.



Disagree. Answers will vary, e.g., there is only one relationship: if the other lines are perpendicular to the parallel lines, then the angles will measure 90° .



2. Agree. Answers will vary, e.g., there are three interior angles and three exterior angles. The exterior angles are supplementary to the interior angles. Since the measures of the interior angles have a sum of 180° , the measures of their supplements will also have a sum of 180° .



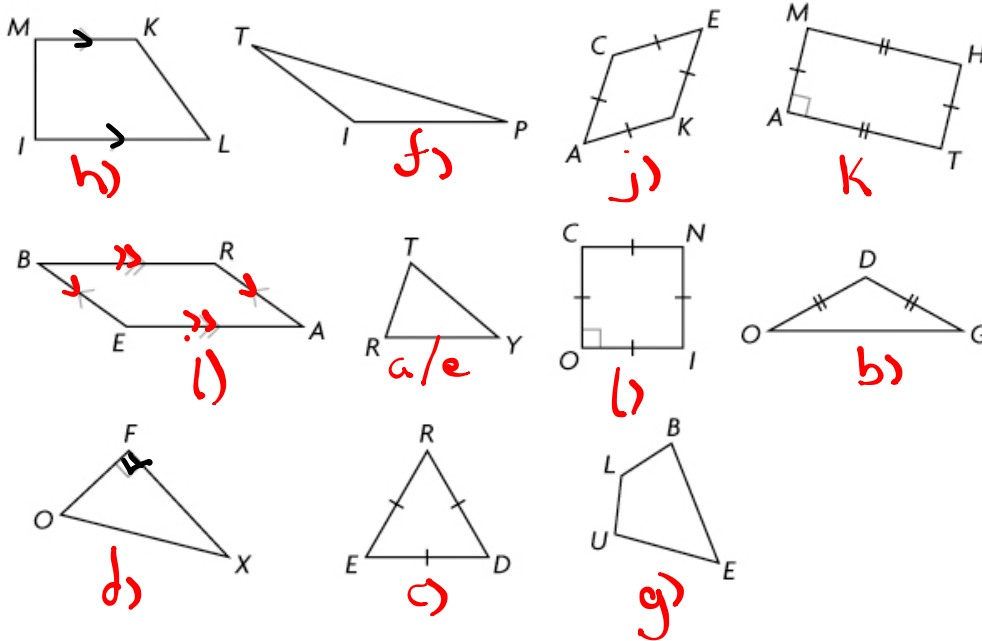
Disagree. Answers will vary, e.g., the exterior angles are supplementary to the interior angles. For example, if all the interior angles are acute, then all the exterior angles will be obtuse. The sum of the measures of the three obtuse angles must be greater than 270° .

REVIEW OF TERMS AND CONNECTIONS

WORDS You Need to Communicate Effectively

1. Match each term with one shape.

- | | | |
|-------------------------|--------------------|------------------|
| a) scalene triangle | e) acute triangle | i) parallelogram |
| b) isosceles triangle | f) obtuse triangle | j) rhombus |
| c) equilateral triangle | g) quadrilateral | k) rectangle |
| d) right triangle | h) trapezoid | l) square |



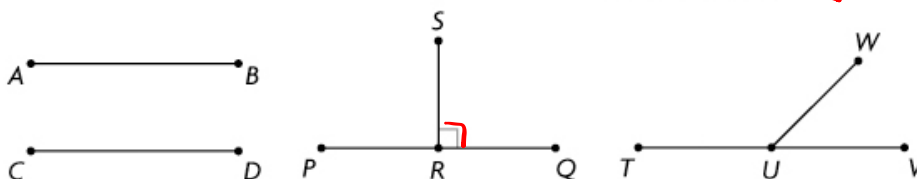
2. Draw a diagram to illustrate each term.

- parallel lines
- perpendicular lines
- supplementary angles

Answers

- | | | |
|--------------------|--------------------|---------------|
| a) $\triangle TRY$ | e) $\triangle TRY$ | i) BEAR |
| b) $\triangle DOG$ | f) $\triangle TIP$ | j) e.g., CAKE |
| c) $\triangle RED$ | g) e.g., BLUE | k) e.g., MATH |
| d) $\triangle FOX$ | h) e.g., MILK | l) e.g., COIN |

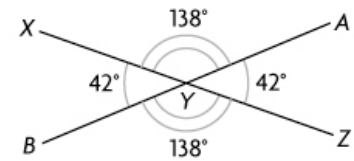
- | | | |
|-------------------|------------------------|---|
| a) parallel lines | b) perpendicular lines | c) $\angle TUW$ and $\angle WUV$ are supplementary. (add to 180°) |
|-------------------|------------------------|---|



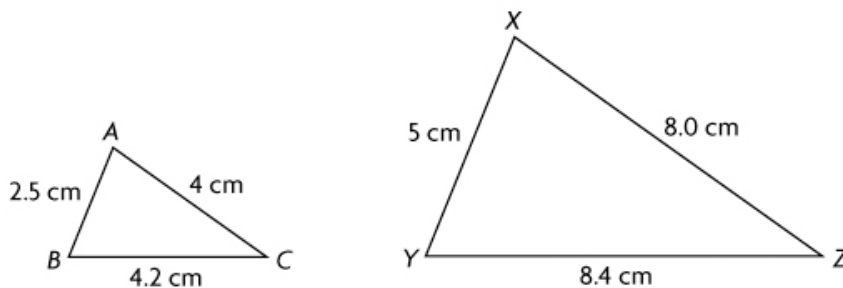
REVIEW OF TERMS AND CONNECTIONS

CONNECTIONS You Need for Success

- A. Two intersecting lines form two pairs of equal angles, called vertically opposite angles.
- B. Two angles are supplementary if the sum of their measures is 180° .
- C. Two shapes are similar if
- the measures of all the corresponding angles are equal and the lengths of all the corresponding sides are related by the same scale factor, or
 - the ratios of the lengths of the sides in one shape equal the ratios of the lengths of the corresponding sides in the other shape.



For example:



$$\frac{AB}{BC} = \frac{2.5}{4.2}$$

$$= 0.595$$

$$\frac{AB}{AC} = \frac{2.5}{4}$$

$$= 0.625$$

$$\frac{BC}{AC} = \frac{4.2}{4}$$

$$= 1.05$$

$$\frac{XY}{YZ} = \frac{5}{8.4}$$

$$= 0.595$$

$$\frac{XY}{XZ} = \frac{5}{8}$$

$$= 0.625$$

$$\frac{YZ}{XZ} = \frac{8.4}{8}$$

$$= 1.05$$

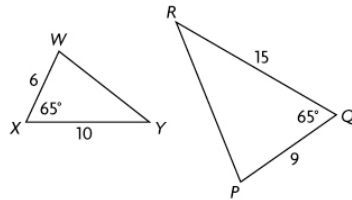
- D. Two shapes are congruent if the measures of all the corresponding angles are equal and the lengths of all the corresponding sides are equal.

REVIEW OF TERMS AND CONNECTIONS

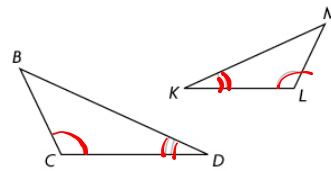
PRACTISING

3. For each of the following, explain how you know that the two triangles are similar.

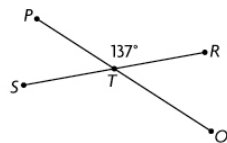
a)



b)



4. Determine the unknown angles.

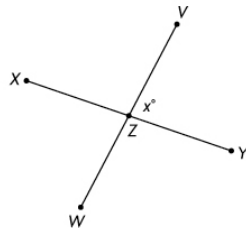


$\angle STO = \angle PTR = 137^\circ$

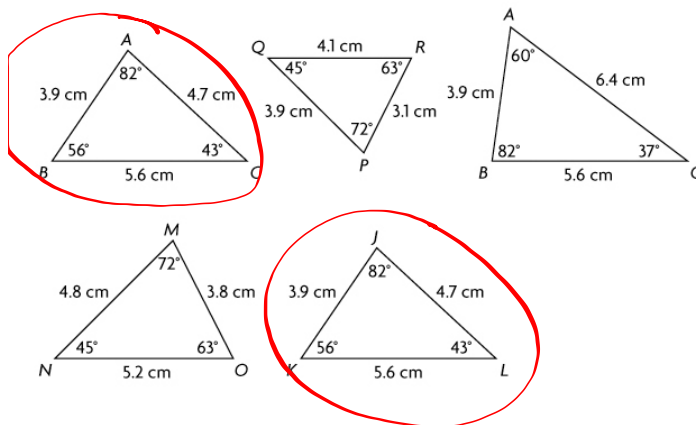
$\angle RTO = 180^\circ - 137^\circ = 43^\circ$

$\angle PTS = \angle RTO = 43^\circ$

5. Determine the measures of the unknown angles in terms of x .



6. Identify the congruent triangles.



Answers

3. a) Answers may vary, e.g., $\frac{WX}{PQ} = \frac{XY}{QR} = \frac{2}{3}$

b) Answers may vary, e.g., since two pairs of corresponding angles in the triangles are equal, and since the sum of the measures of the angles in a triangle is 180° , I know that the third pair of corresponding angles must also be equal; so, $\triangle BCD \sim \triangle MLK$.

4. $\angle PTS = 43^\circ$
 $\angle STO = 137^\circ$
 $\angle RTO = 43^\circ$
 Supplementary angles
 Vertically opposite angles are equal.
 Vertically opposite angles are equal.

5. $\angle VZX = 180^\circ - x$
 $\angle XZW = x$
 $\angle YZW = 180^\circ - x$
 Supplementary angles
 Vertically opposite angles are equal.
 Vertically opposite angles are equal.

6. $\triangle ABC \cong \triangle JKL$
 All corresponding sides are equal, and all corresponding angles are equal.

Attachments

GS2-review.gsp

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