MTH1W

Geometric Shapes and Angle Properties

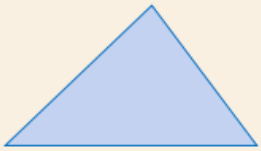
Triangles can be classified using their side lengths or their angle measures.

scalene triangle
- no equal sides
- no equal angles

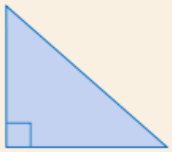
isosceles triangle
- two equal sides
- two equal angles

equilateral triangle
- three equal sides
- three equal angles

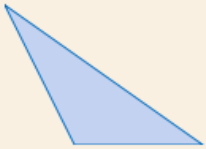
acute triangle
- three acute angles (less than 90°)



right triangle
- one right angle (90°)



obtuse triangle
- one obtuse angle (between 90° and 180°)



1. **Draw** an example of a:

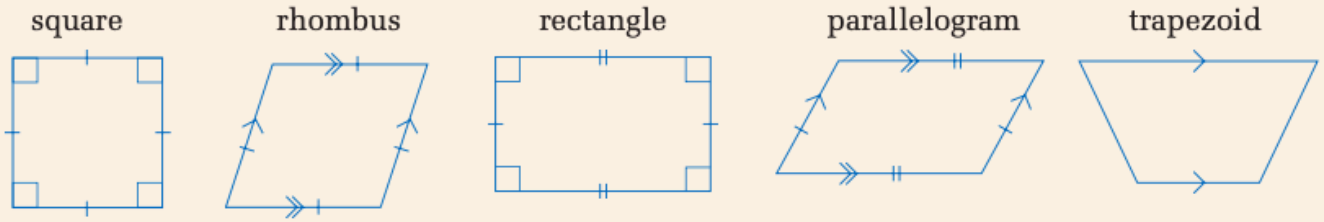
Scalene Acute Triangle	Isosceles Acute Triangle	Equilateral Acute Triangle
Scalene Right Triangle	Isosceles Right Triangle	Equilateral Acute Triangle
Scalene Obtuse Triangle	Isosceles Obtuse Triangle	Equilateral Obtuse Triangle

A **polygon** is a closed figure formed by three or more line segments.

A **regular polygon** has all sides equal and all angles equal.

Some quadrilaterals have special names. A regular quadrilateral is a **square**. An irregular quadrilateral may be a **rectangle**, a **rhombus**, a **parallelogram**, or a **trapezoid**.

Number of Sides	Name
3	triangle
4	quadrilateral
5	pentagon
6	hexagon



2. What do you call a:

a) 5-sided shape?

b) 6-sided shape?

c) 7-sided shape?

d) 8-sided shape?

e) 9-sided shape?

f) 10-sided shape?

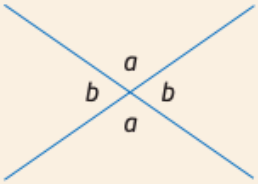
3. How is a **rectangle** different from a **square**?

4. How is a **rectangle** different from a **parallelogram**?

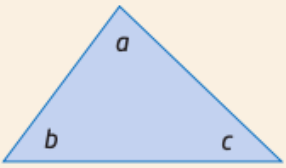
5. How is a **rhombus** different from a **square**?

6. What makes something a **trapezoid**?

When two lines intersect, the **opposite angles** are equal.



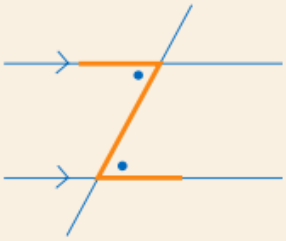
The sum of the interior angles of a triangle is 180°.



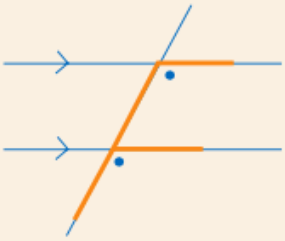
$a + b + c = 180°$

When a transversal crosses parallel lines, many pairs of angles are related.

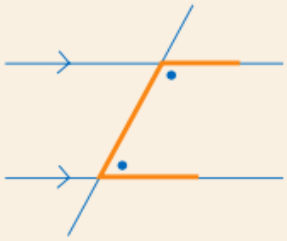
alternate angles are equal



corresponding angles are equal

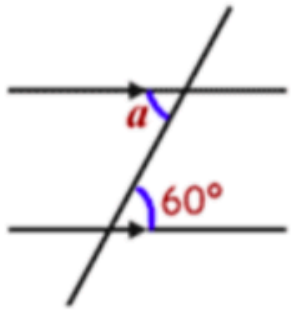


co-interior angles have a sum of 180°



7. Estimate the size of each lettered angle here.

a)



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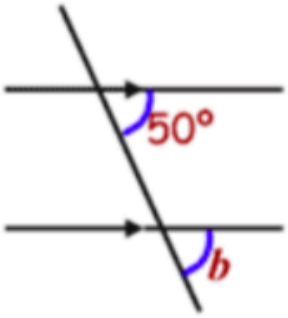

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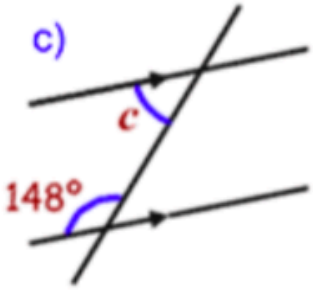
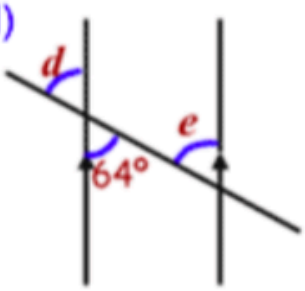


d)



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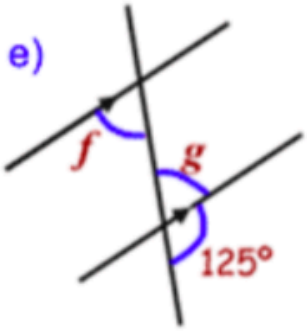

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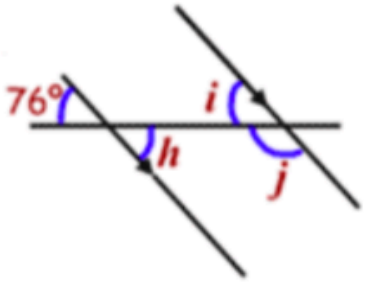
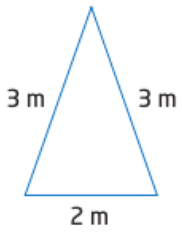


1. Classify each triangle using its side lengths.

a)



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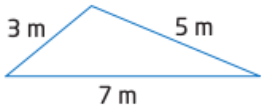
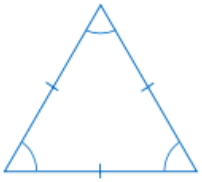


2. Classify each triangle in two ways using its angle measures.

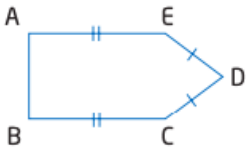
a)



b)

3. Classify each polygon according to its number of sides and whether it is regular or irregular.

a)



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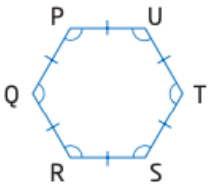
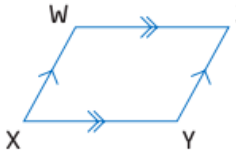


4. Classify each quadrilateral. Give reasons for your answer.

a)



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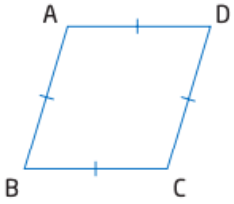
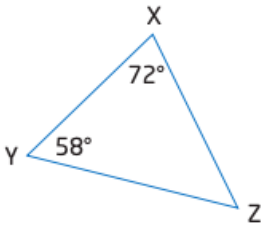


5. Find the measure of the third angle in each triangle.

a)



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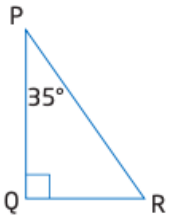
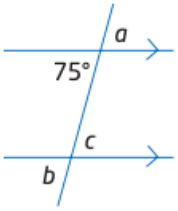


6. Find the measures of the angles a, b, and c. Give reasons for each answer.

a)



b)