Properties of Triangles

Duisebayeva P.
Altynbekov Sh.

Theme of the lesson:

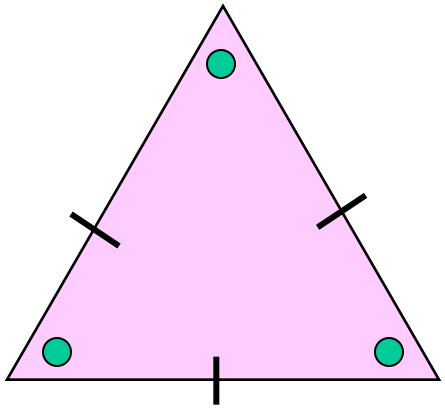
Triangle. Properties of Triangles. Types of triangle.

Aims of the lesson:

- to give the definition of the shape: triangle
- to give the types of triangle

Properties of Triangles

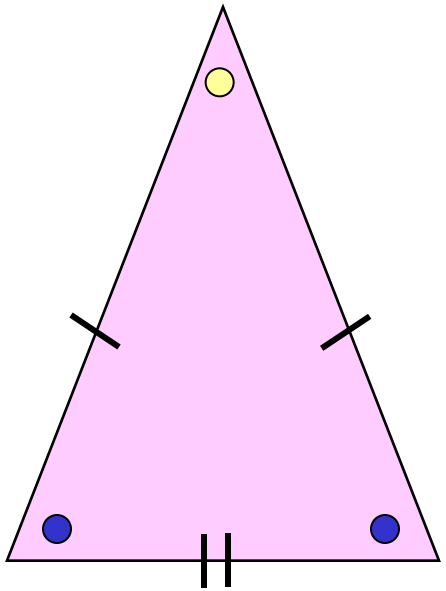
Types of Triangles



Equilateral Triangle

3 equal sides

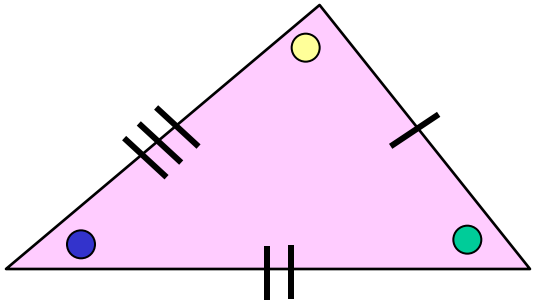
3 equal angles.



Isosceles triangle

2 equal sides

2 equal angles (base)

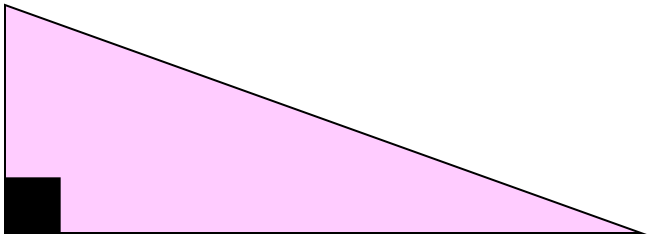


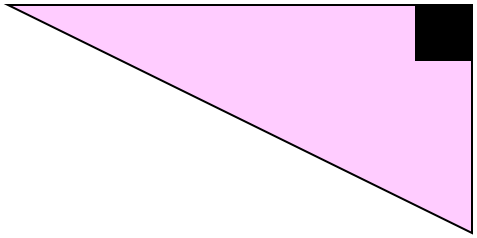
Scalene triangle

3 unequal sides

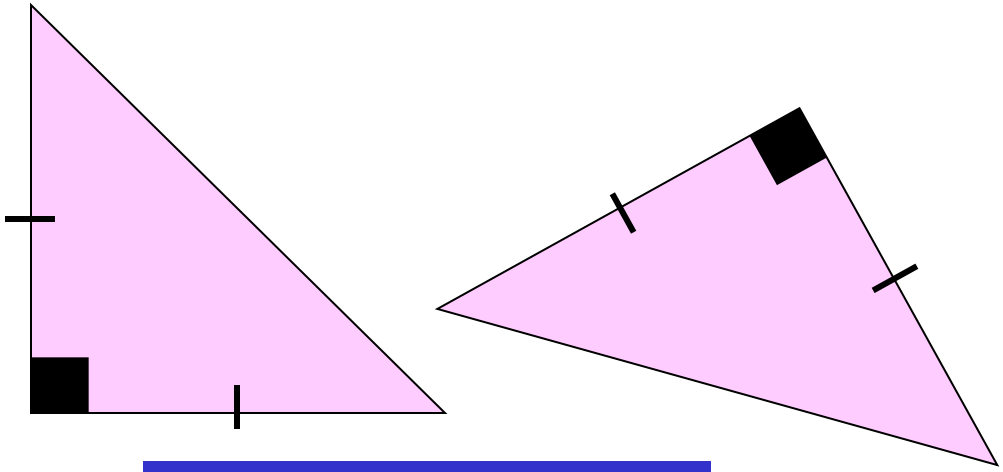
3 unequal angles

Any triangle containing a 90° angle is a right-angled triangle

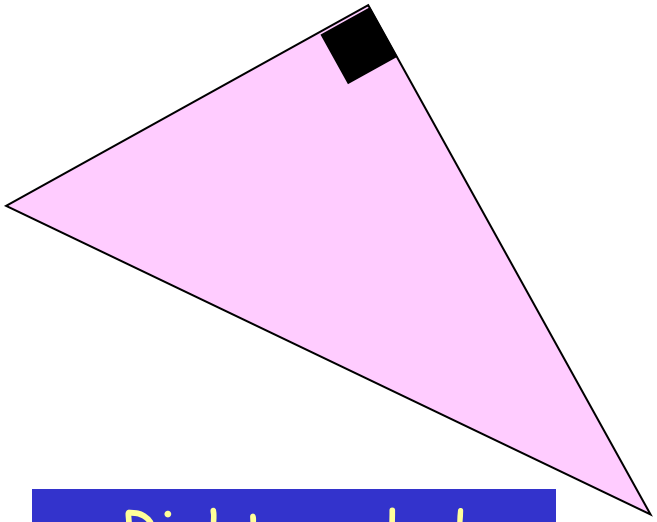




An isosceles or a scalene triangle may contain a right angle.

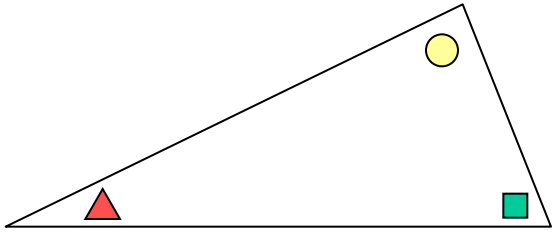


Right-angled isosceles triangles.



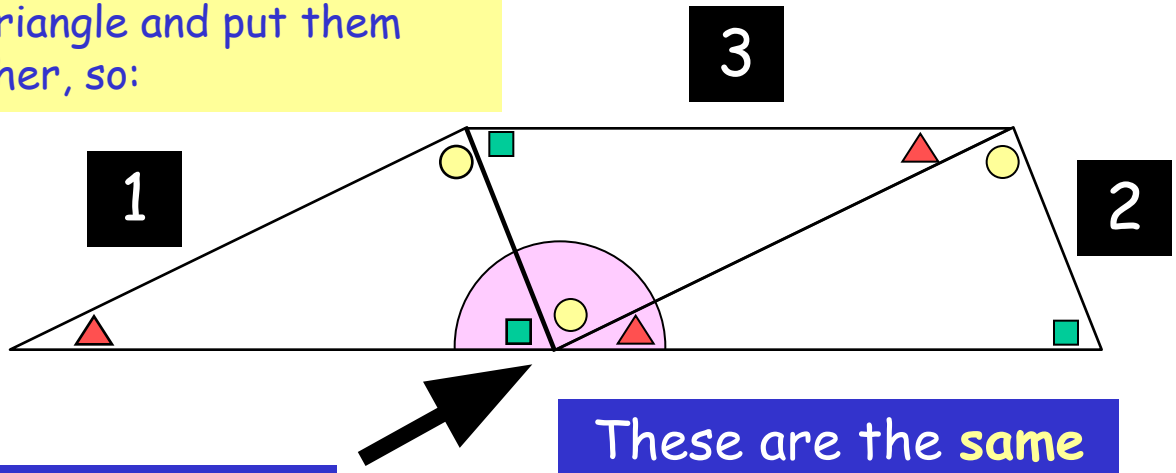
Right-angled scalene triangle.

To determine the angle sum of any Triangle



How can we use this to help us?

Take 3 identical copies of this triangle and put them together, so:



Angles on a straight line add to 180°

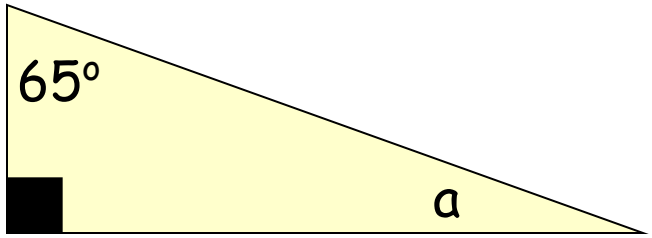
These are the **same** angles as in the triangle!

The angle sum of a triangle = 180^0

Calculating unknown Angles

Example 1

Calculate angle a.

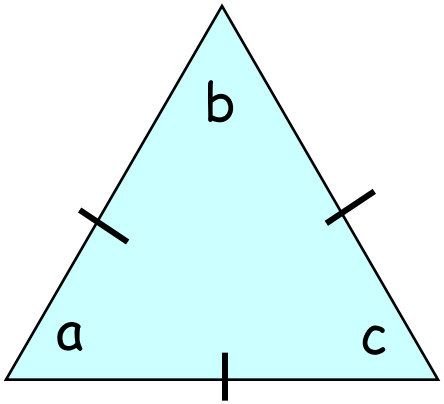


Angle a = 180 – (90 + 65)

= 180 – 155 = 25°

Example 2

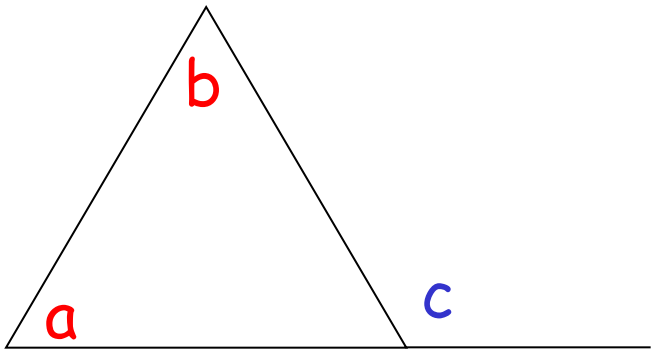
Calculate angles a, b and c



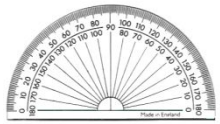
Since the triangle is equilateral,

angles a, b and c are all 60° (180/3)

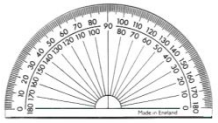
Exterior Angle of a Triangle



1. Draw a triangle of any size
2. Extend one of the sides
3. Measure angle a and b accurately using a protractor

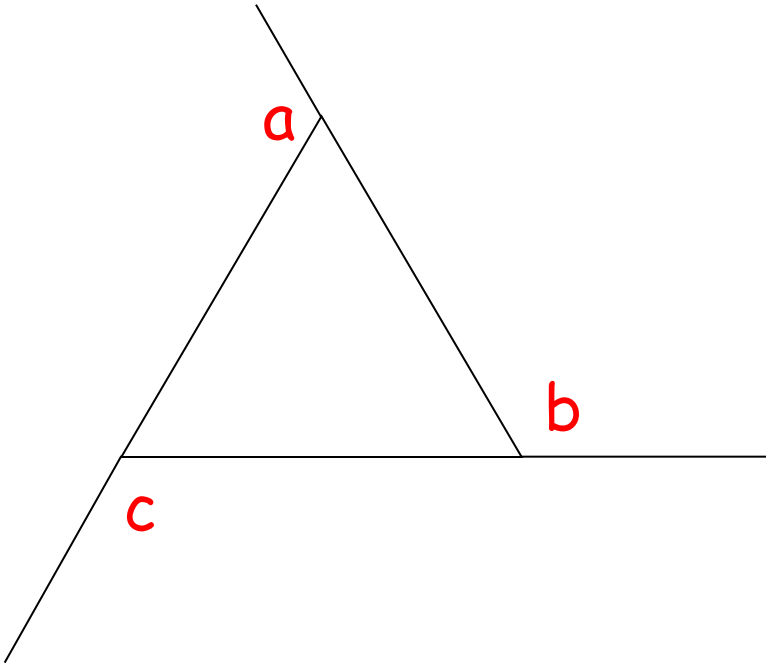


4. Add angles a and b together
5. Measure angle c accurately using a protractor

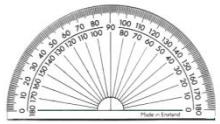


6. What do you notice?

Exterior Angles of a Triangle



1. Draw a second triangle of any size
2. Extend <u>all</u> of the sides
3. Measure angle a, b and c accurately using a protractor



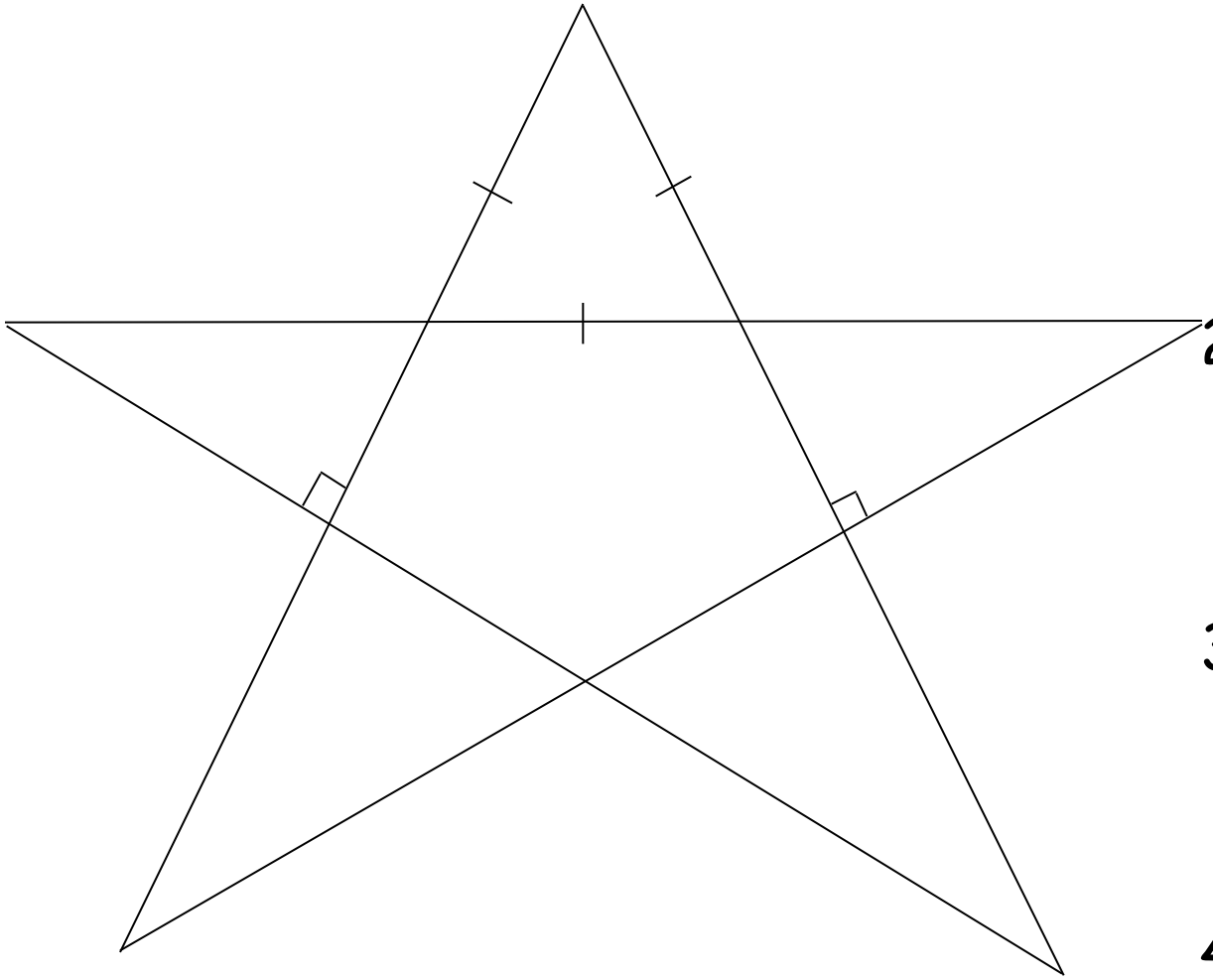
4. Add angles a, b and c together
5. What do you notice?

Copy and complete the following statements:

- A triangle with all sides equal is called ...
- A triangle with two sides equal is called ...
- A triangle with no sides equal is called ...

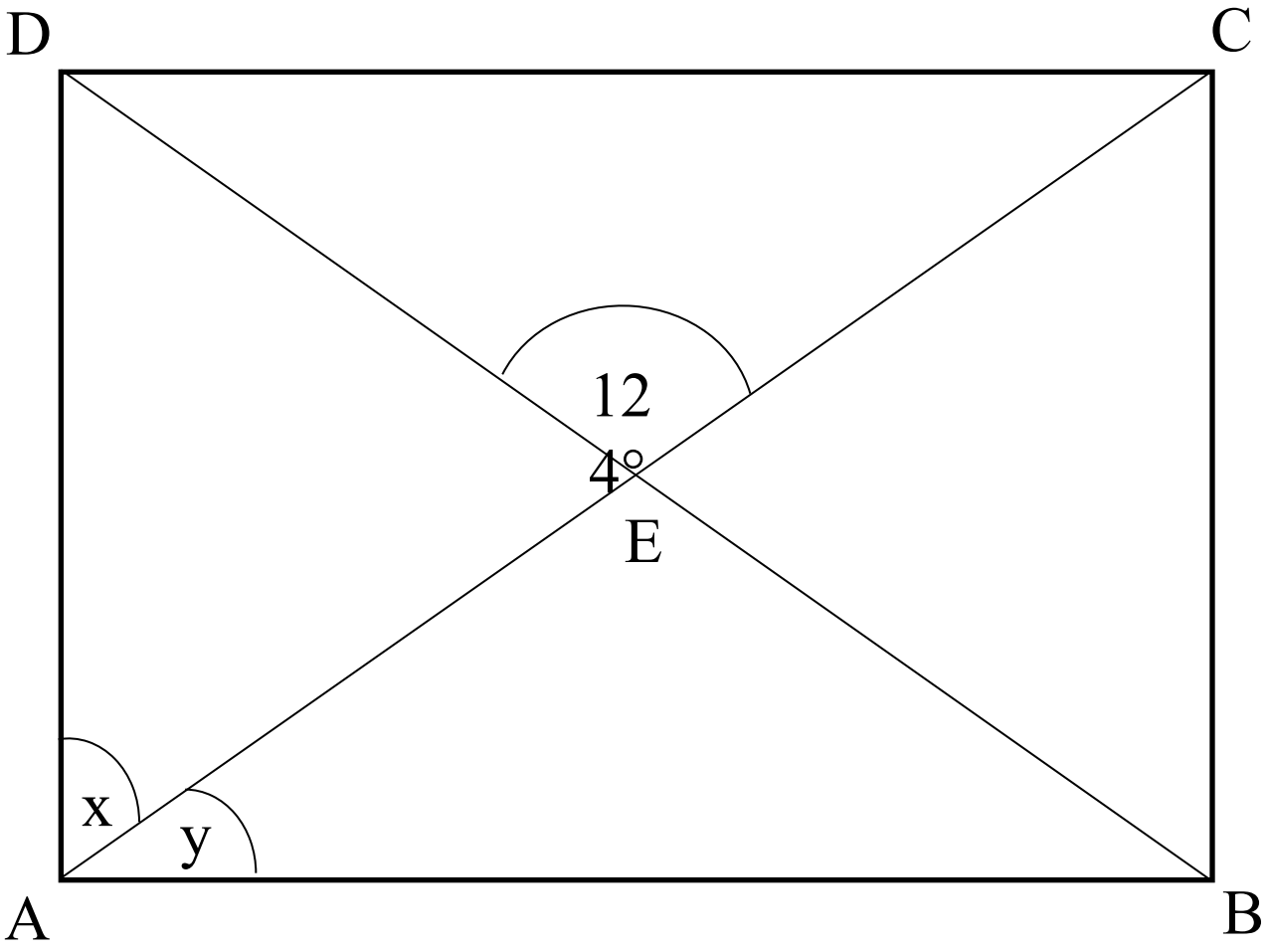
- A triangle with all angles equal is called ...
- A triangle with two (base) angles equal is called ...
- A triangle with one angle of 90° is called ...

- An equilateral triangle has got all equal ... and ...
- An isosceles triangle has got two equal ... and ...
- Two triangles that are identical in shape and size are called ...



*Not drawn accurately

1. Draw this diagram
2. Calculate all the angles in this star.
3. How many right-angled triangles angles?
4. How many pairs of congruent triangles are there?



1. Draw this diagram
2. Identify 2 pairs of congruent isosceles triangles.
3. Identify four pairs of congruent right-angled triangles.
4. Calculate angles x and y.

Thank you for attention!!!