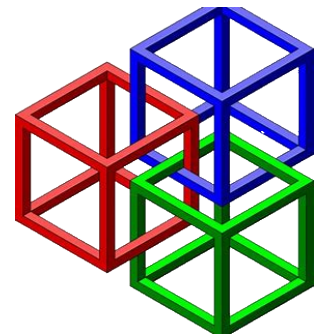


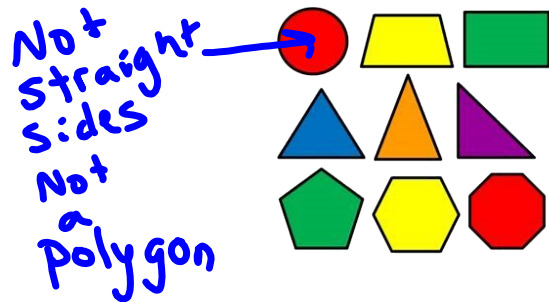
## Chapter 6 Geometry & Measurement



What we know about shape so far...

A Polygon is a geometric shape with straight sides and angles.

Some examples of polygons are octagons, triangles, quadrilaterals and more.



Triangles have 3 sides and 3 angles. The angles add to  $180^\circ$ .

Quadrilaterals have 4 sides and 4 angles. The angles add to  $360^\circ$ .

## Lesson 1 Exploring Triangles



To sort triangles we can use 3 characteristics: (attributes)

-Length of Sides

-Measures of Angles

- Lines of Symmetry

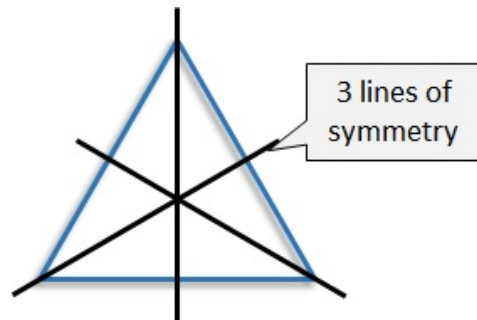
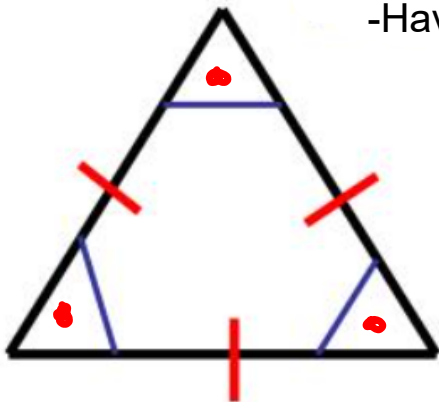


# Equilateral Triangles *Study (memorize)*

-Have 3 equal side lengths

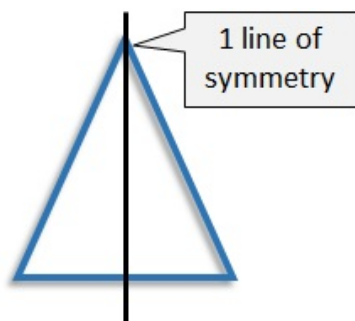
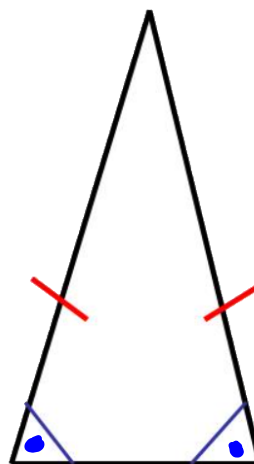
-Have 3 equal angles (all angles are  $60^\circ$ )

-Have 3 lines of symmetry



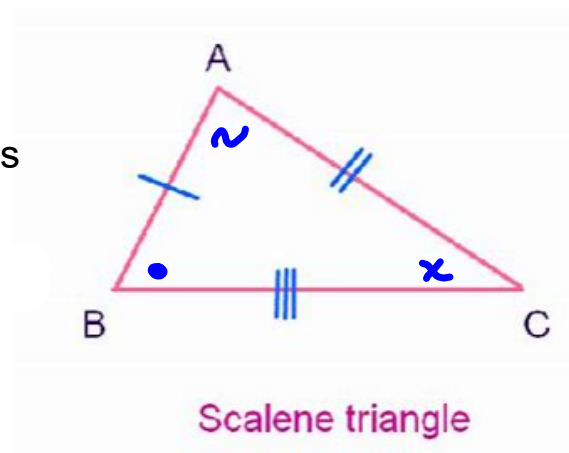
## Study (memorize) Isosceles Triangle

- Have 2 equal side lengths
- Have 2 equal angles
- Have 1 line of symmetry

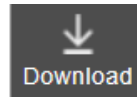


Study (memorize)  
Scalene Triangle

- Have NO equal side lengths
- Have NO equal angles
- Have NO line of symmetry

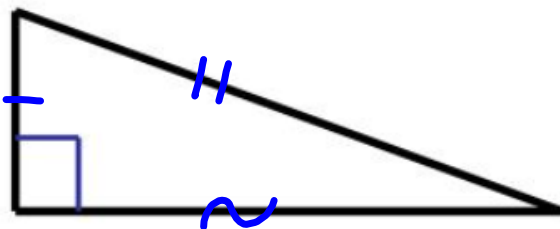


# Study (memorize) Right-Angled Triangles

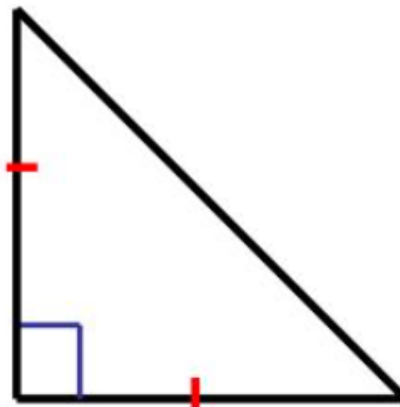


Right-Angled Triangles can be either Isosceles or scalene triangles

They have an Interior angle of 90 degrees



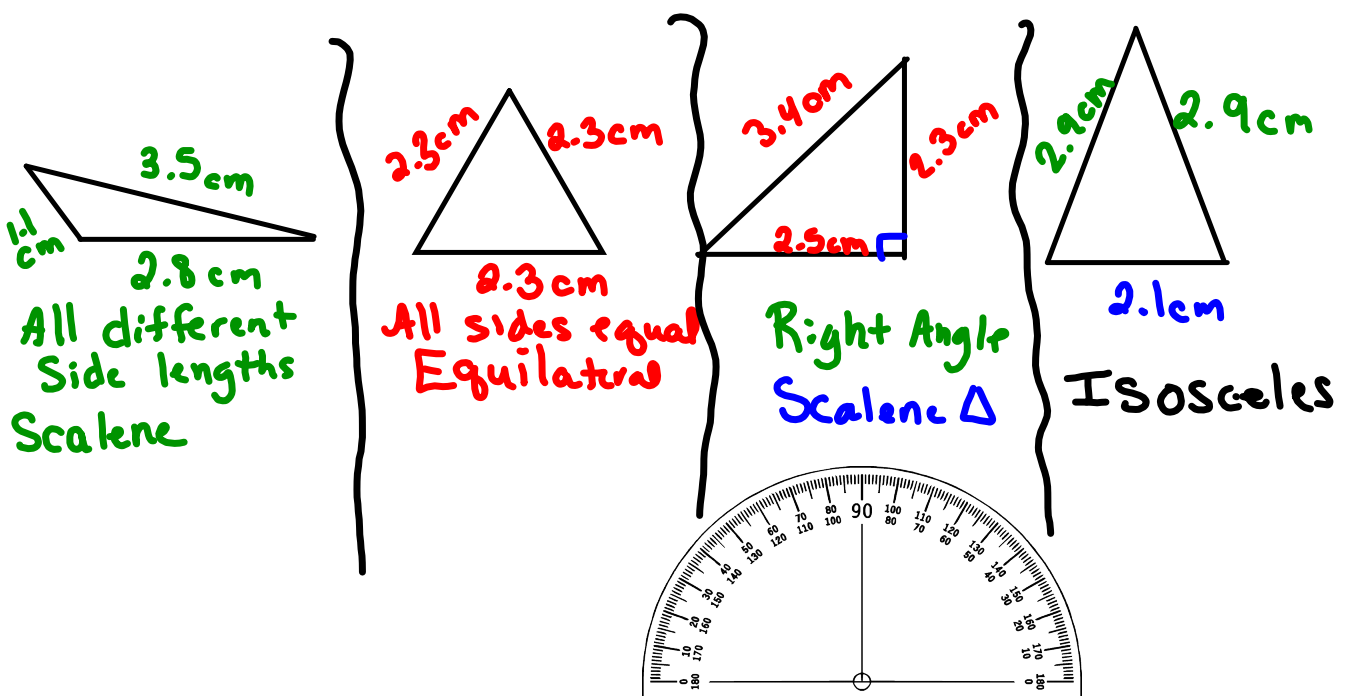
Scalene Right Angled Triangle



Isosceles Right Angled Triangle

---

Use a ruler and a protractor to name each triangle as either isosceles, equilateral, or scalene



# Class/Homework

# 1, 2

page 201 #1 (Use rulers & Protractors to prove...sketch the triangle)

page ~~202~~ #2 (Use rulers & Protractors to prove...sketch the triangle)

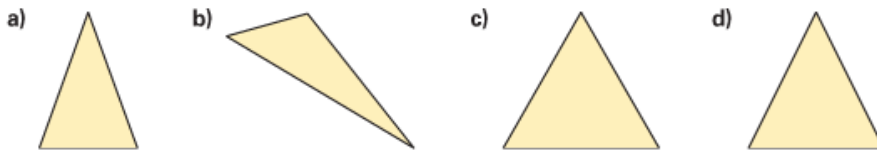
page 203 ~~#7~~ (Use rulers & Protractors to prove...sketch the triangle)



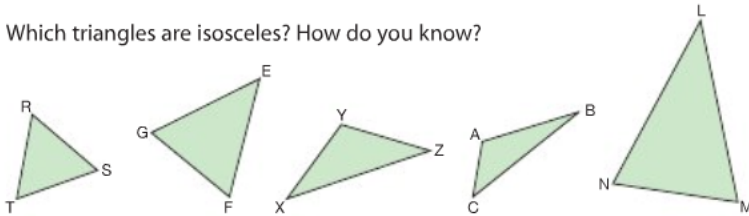


**Practice**

1. Name each triangle as isosceles, equilateral, or scalene.  
How did you decide which name to use?



2. a) Which triangles are isosceles? How do you know?



- b) For each isosceles triangle, name the sides that have the same length, and the angles that have the same measure.  
c) Which triangle is equilateral? How do you know?  
d) Which triangle is not isosceles and not equilateral? Which type of triangle is it?
3. Use a geoboard, geobands, and square dot paper.
- a) Make 3 different scalene triangles.  
Record each triangle on dot paper.  
How do you know each triangle is scalene?
- b) Make 3 different isosceles triangles.  
Record each triangle on dot paper.  
How do you know each triangle is isosceles?
- c) Try to make an equilateral triangle.  
What do you notice?



4. Work with a partner.

a) Look around you. Find 2 examples of:

- a scalene triangle
- an isosceles triangle
- an equilateral triangle

Sketch each triangle. Describe where you found it.

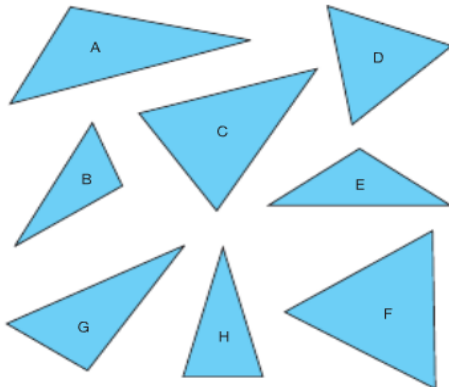
b) Which type of triangle was easiest to find? Why might this be?

5. Here is the truss of the Burrard Street Bridge in Vancouver, BC.

Which types of triangles do you see in the truss? How could you check?



6. Your teacher will give you a large copy of these triangles.

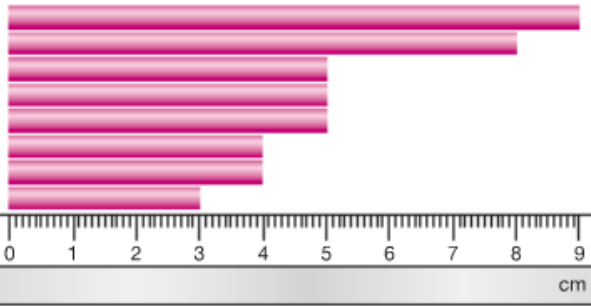


- List the attributes of each triangle.
- Sort the triangles by the number of equal sides.
- Sort the triangles by the number of equal angles.
- What do you notice about your sortings?

7. Identify each triangle as equilateral, isosceles, or scalene.  
Which strategy did you use?



8. You will need drinking straws, a ruler, scissors, and pipe cleaners. Cut the straws into 8 pieces as shown. Use pieces of pipe cleaner as joiners.

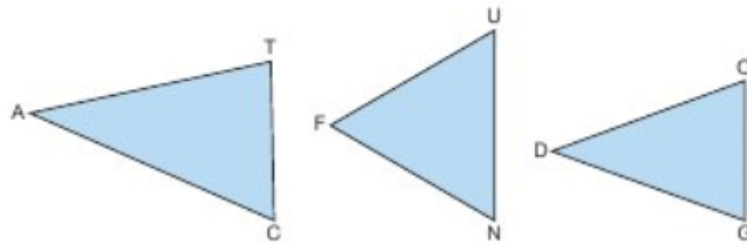


- a) Make each triangle.  
Trace and label your results.
- an equilateral triangle
  - an isosceles triangle with the least perimeter
  - a scalene triangle with the greatest perimeter
- b) Which straws could not be used together to make a triangle? Explain.

Perimeter is the distance around a shape.



9. a) Name each triangle as scalene, isosceles, or equilateral.  
Explain your choice each time.

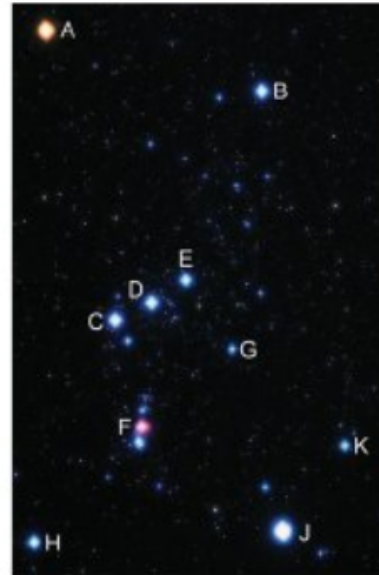


b) How can you use the measures of the angles in a triangle to predict how the lengths of the sides compare?

10. Your teacher will give you a copy of this picture of the Orion constellation.

The brightest stars are labelled with letters.

- a) Connect points C, D, and F to form a triangle.  
Which type of triangle did you form?  
How do you know?
- b) Connect points F, H, and J to form a triangle.  
Which type of triangle did you form?  
How do you know?
- c) Which points would you connect to form an equilateral triangle?  
Check by measuring the angles.



11. Use a geoboard, geobands, and square dot paper.

- a) Make an isosceles triangle.  
Draw the triangle on dot paper.
- b) Use the triangle from part a.  
Change the triangle so it is scalene.  
Describe the changes you made.