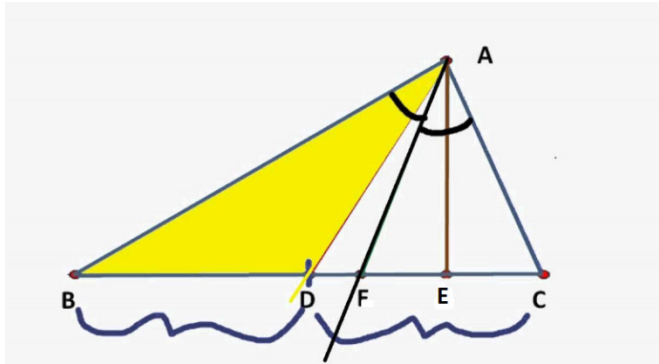


**MATH 5: CLASSWORK 16,**

**February 21, 2021**



AD-Median

AE- Altitude

AF- Angle Bisector

**Triangle properties:**

1. Sum of interior angles of a triangle is  $180^\circ$ .

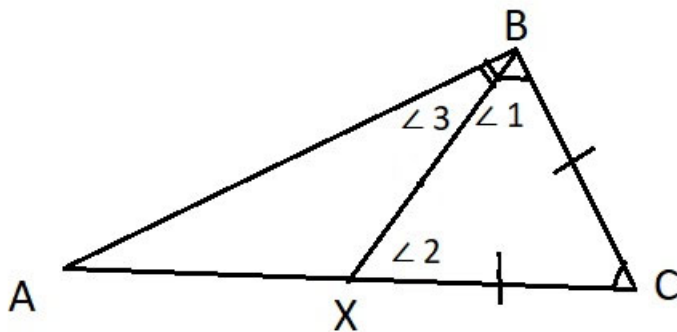
**$(\forall \Delta ABC, \angle ABC + \angle BCA + \angle BAC = 180^\circ)$**  New symbol  $\forall$  - for any out there.

2. In any triangle the sum of 2 sides is always greater than the third.

**$(\forall \Delta ABC, AB + BC > AC)$**

3. In **any triangle**,

- the **largest** interior **angle** is **opposite** the **largest side**.
- the **smallest** interior **angle** is **opposite** the **smallest side**
- the middle-sized interior angle is **opposite** the middle-sized side



Given:  $AC > BC$

Prove:  $\angle ABC > \angle BAC$

Construct point X so that  $|BC| = |XC|$ .

$\angle 1 = \angle 2 = \angle 3 + \angle A$  (Exterior angle theorem)

Because

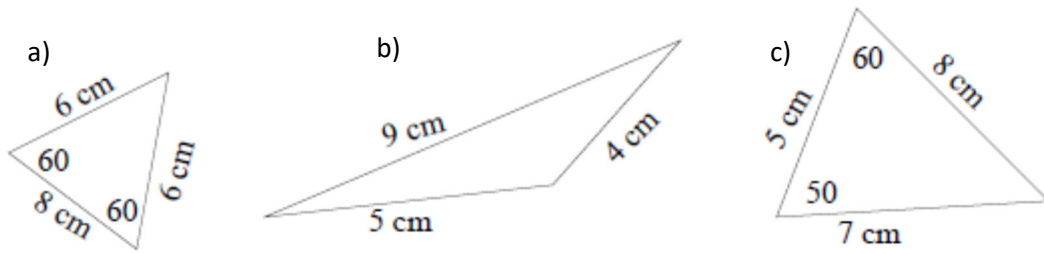
$$\angle 3 + \angle A + \angle AXB = 180 = \angle 2 + \angle AXB$$

$$\angle B = \angle 1 + \angle 3 = \angle A + \angle 3 + \angle 3$$

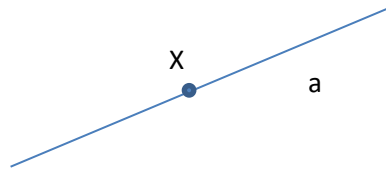
### MATH5: HOMEWORK 16,

February 21, 2021

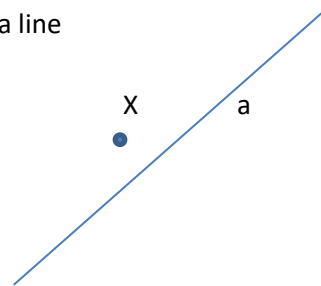
1. The triangles with such measurements do not exist. Describe what is wrong with them:



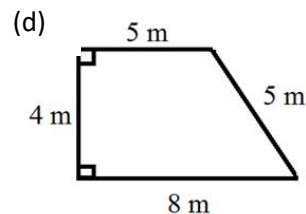
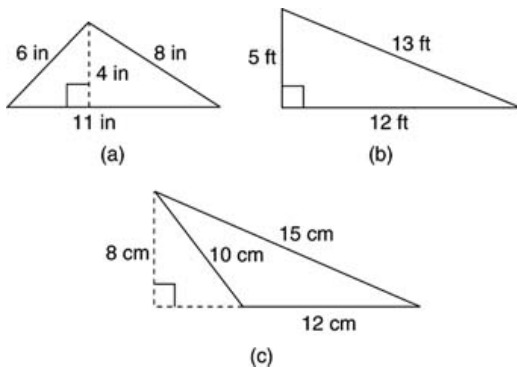
2. Using a ruler with no marks and a compass construct
- a. perpendicular line to a given line through a point on this line



- b. perpendicular line through a point outside of a line



3. Find area of the below figures:



4. Replace stars by digits in the number  $21^*53^*$  to make it divisible by 45 [hint: remember divisibility rule by 9?].
5. On a separate piece of paper prepare the problem on operations with powers. Your problem will be offered to another student to be solved. Example:

$$\frac{6^6}{2^2 \cdot 3^3} = 2^? \cdot 3^?$$