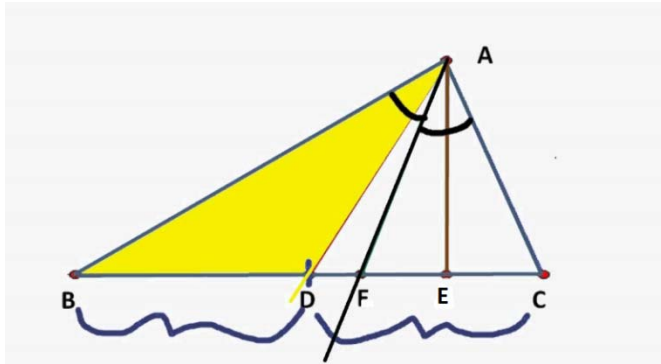


HOMEWORK 16,

Feb, 25 2018



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

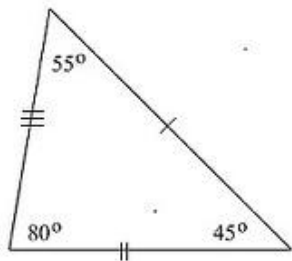
*(We will not proof this property for now, if you are interested, let me know)*

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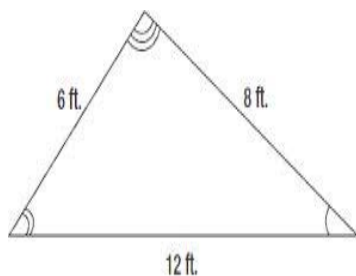
**HOMEWORK 16,**

**Feb, 25 2018**

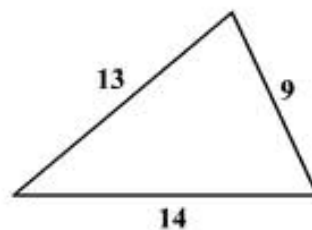
1. For the given triangles make the correct fit of angles and sides. The figures are not to scale, so don't try measuring angles with the protractor.



a) 15cm, 10cm, 8cm

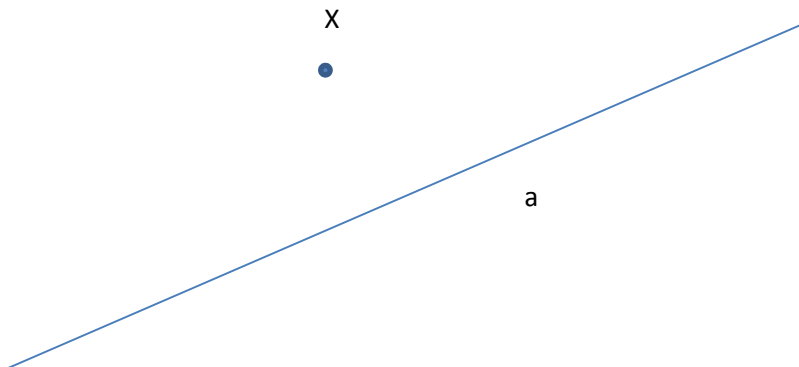


b) 44°, 70°, ?

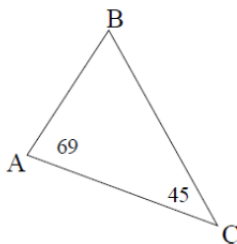


c) 35°, 65°, ?

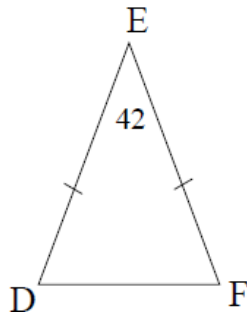
2. Using compass construct a line perpendicular to line a through a point X.



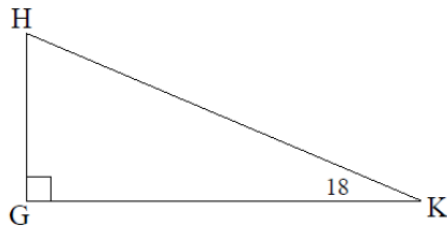
3. Find the unknown angles. The figures are not to scale, so don't try measuring angles with the protractor.  
(a) Find  $\angle ABC$ .



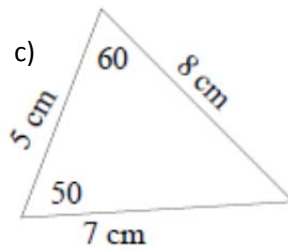
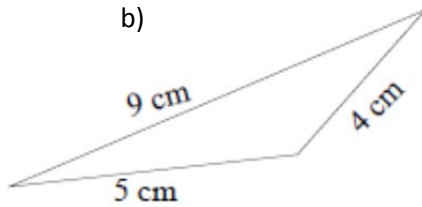
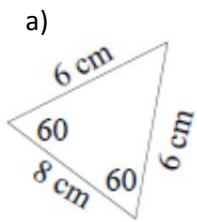
- (b) The triangle  $\triangle DEF$  is symmetric (isosceles):  $\angle EDF = \angle EFD$ . Find  $\angle EDF$ .



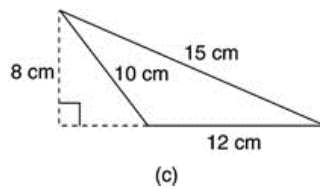
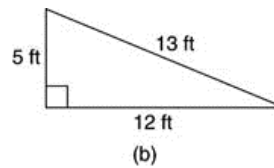
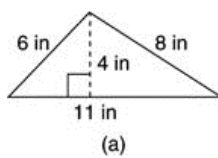
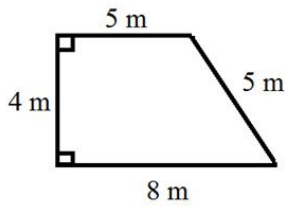
(c) Find  $\angle GHK$ .



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



5. Find area of the below figures:



6. Replace stars by digits in the number  $21^*53^*$  to make it divisible by 45 [hint: remember divisibility rule by 9?].