MATH 4: HOMEWORK 17
February 9, 2020
Theory part

Triangle properties:

1. Sum of interior angles of a triangle is 180°.

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

2. In any triangle the sum of 2 sides is always grater then the third.

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

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

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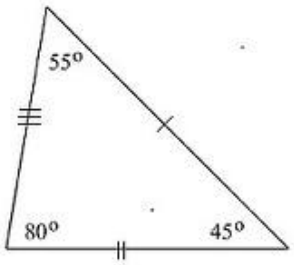
Write and draw on this page. Attach this page to your homework

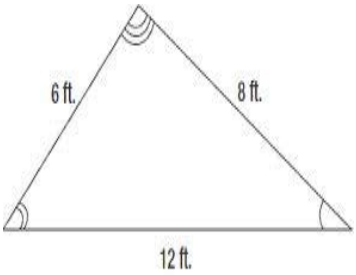
1. For the given triangles make the correct fit of angles and sides. The figures are not to scale, so don't try measuring angles with the protractor.

a)



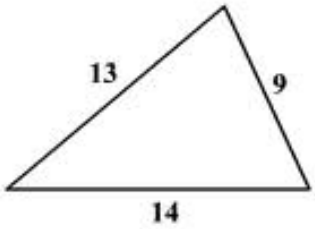
15cm, 10cm, 8cm

b)



44°, 70°, ?

c)



35°, 65°, ?

Write this portion of your homework on a separate quadrille paper.

2. Solve the equations:

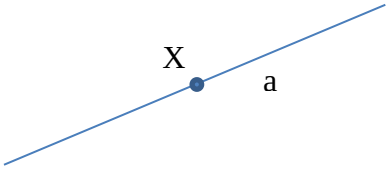
(a) $x + \frac{1}{12} = \frac{7}{24}$ (b) $\frac{9}{14} - y = \frac{1}{21}$ (c) $x - 1\frac{1}{6} = 2\frac{5}{12}$

(d) $\frac{7}{10} \cdot a = \frac{9}{10}$ (e) $x \div \frac{2}{3} = \frac{9}{14}$ (c) $\frac{2}{11} \div y = \frac{9}{11}$

3. In a certain class, $\frac{2}{5}$ of all students got A, $\frac{1}{3}$ got C, and the remaining 8 students got B. How many students are there in the class?

4. This problem should be done without using the protractor. You can use the clock face we used in class to help you.) At noon, the hour and minute hands both point to 12:00.
   a. Find the angle each of the hands makes with the vertical line at 12:10, and find the angle between the two hands.
   b. Find the angle between the two hands at 12:20. By how much is this angle increasing every minute?
   c. *When will be the next time the two hands meet again?

5. Find a bug in this learning material: https://www.mathopenref.com/trianglesideangle.html *[I played with constructing an equilateral triangle. You can print your screenshot and explain what the problem is in the triangle. Watch for sum of all angles and the lengths of the sides*].
6. 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