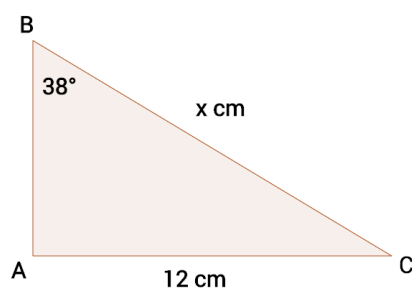


**PART 1 - CALCULATOR ACTIVE QUESTIONS**

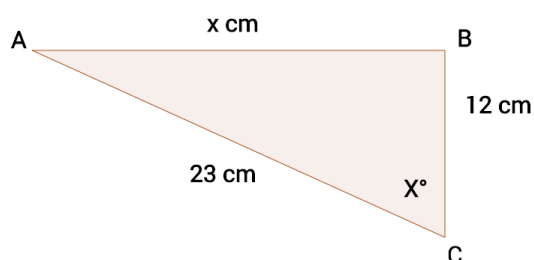
1. Solve for the unknown in each of the diagrams provided below. In terms of showing work, please show (i) key substitutions into appropriate formula(s) & (ii) final answer(s)

**(13 marks)**

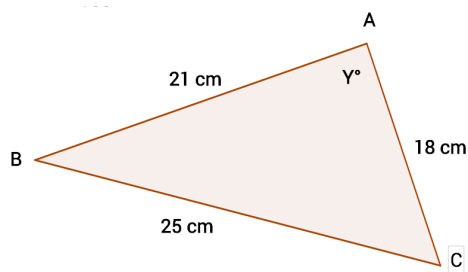
(a) Solve for x (side a) in  $\triangle ABC$



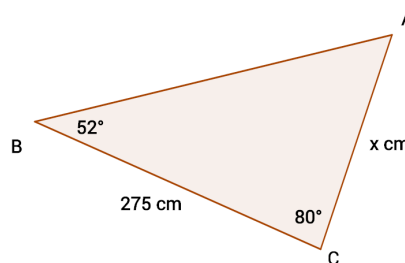
(b) Solve for x (side c) and  $\angle BCA$  (angle  $X$ ) in  $\triangle ABC$



(c) Solve for  $\angle BAC$  (angle  $Y$ ) in  $\triangle ABC$



(d) Solve for x (side b) in  $\triangle ABC$

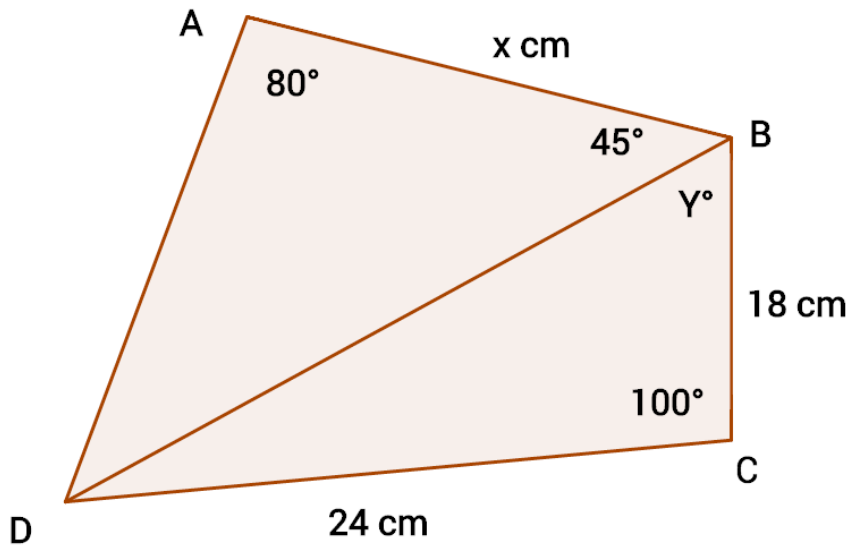


2. Given Quadrilateral ABCD:

- Solve for  $\angle CBD$  (angle  $y$ ).
- Solve for  $x$  (side AB).
- Determine the area of  $\triangle ABD$
- Determine the area and perimeter of the quadrilateral.

**(17 marks)**

- CHALLENGE: At what angle do the diagonals (AC and BD) intersect?



Name: \_\_\_\_\_ Date : \_\_\_\_\_

IM 3 UNIT 5 Quiz V1 - Triangle Trigonometry  
Teacher: Mr. Santowski and Mr. Smith

Score: \_\_\_\_\_

### PART 2 - CALCULATOR INACTIVE QUESTIONS

3. You were presented with two special right triangles, with which you can answer the following questions that deal with the special angles and their ratios.

**(10 marks)**

Draw the  $30^\circ$ - $60^\circ$ - $90^\circ$  right triangle here and label all sides and angles

Draw the  $45^\circ$ - $45^\circ$ - $90^\circ$  right triangle here and label all sides and angles

$$\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) =$$

$$\cos(60^\circ) =$$

$$\tan(45^\circ) =$$

$$\sin(45^\circ) =$$

$$\cos^{-1}\left(\frac{1}{\sqrt{2}}\right) =$$

$$\tan^{-1}(\sqrt{3})$$

Solve the equation  $2\cos(x) - 1 = 0$

If  $f(x) = \sin(x)$ , evaluate  $f(30^\circ)$

If  $f(x) = \tan(x)$ , solve  $f(x) = \frac{1}{\sqrt{3}}$