Construction Worksheet #2

Complete the following questions showing all work.

1 **a** Use your protractor to draw accurately $A\hat{B}C$ of size 50^o.

b Use a compass and ruler only to bisect $A\hat{B}C$.

c Use a protractor to check the accuracy of your construction.

2 **a** Use your protractor to draw accurately $P\hat{Q}R$ of size 122^o.

b Use a compass and ruler only to bisect $P\hat{Q}R$.

c Use a protractor to check the accuracy of your construction.

3 **a** Draw any triangle ABC and carefully bisect its three angles.

b Repeat with another triangle DEF of different shape.

c Check with other students in your class for any observations about the three angle bisectors.

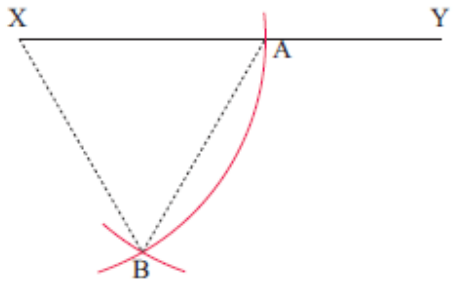
d Copy and complete: "The three angle bisectors of a triangle .....".

4 **a** Use a set square or a protractor to draw an angle of 90^o. Let this angle be $P\hat{Q}R$.

b Bisect $P\hat{Q}R$ using a compass and ruler only. Check that each angle measures 45^o.

c Using a compass and ruler only, construct an angle measuring $22\frac{1}{2}^o$.

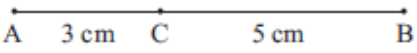
5 **a** [XY] is a line segment 5 cm long. At X an arc is drawn to cut [XY] at A. Keeping the same radius another arc is drawn with centre A to cut the first arc at B.
[AB] and [BX] are then joined by straight line segments.
Explain why triangle ABX is equilateral.



b What is the size of angle $A\hat{X}B$?

c Perform the construction in **a**. Use it to construct angles of size:
i 30^o **ii** 15^o.

6 **a** Accurately draw the line segment [AB] as shown. Mark on it the points A, B and C.



b Use a compass and ruler construction to draw right angles at B above the line segment [AB], and at C below [AB].

7 **a** Draw a line segment [XY] of length 8 cm.

b At X use a compass and ruler to construct a 90^o angle.

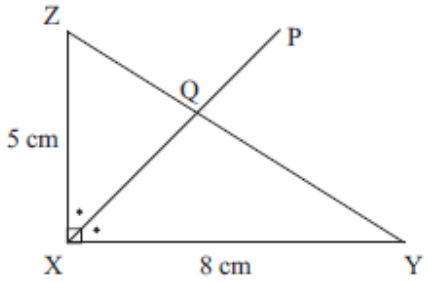
c Draw [XZ] of length 5 cm and join [ZY] as shown.

d Measure [ZY] to the nearest mm.

e Bisect $Z\hat{X}Y$ using a compass and ruler only.

f Find by measuring:

i the length of [QY] **ii** the size of $X\hat{Q}Y$.



8 **a** Draw line segment [AB] of length 4 cm.

b At A use a compass and ruler to construct a 90^o angle.

c Locate the point C so that $C\hat{A}B = 90^o$ and the length of [AC] is 3 cm.

d Join [BC] and measure its length.

e Use a protractor to measure angle $C\hat{B}A$.