

Assignment Q8 b

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$\angle BAQ = 30^\circ$
 $\Rightarrow \angle BAC = 30^\circ$
 also $\angle CAP = 180^\circ - \angle CAQ \Rightarrow \angle CAP = 120^\circ$
 $\Rightarrow \angle CAD = \angle PAD = 60^\circ$
 $\Rightarrow \angle BAD = 90^\circ$
 $\Rightarrow BD$ is a diameter
 $\angle ADB = \angle ACB = 30^\circ$ [Angle made a chord at two different points]
 also $\angle CAB = 30^\circ$
 $\Rightarrow \triangle ABC$ is an isosceles triangle

