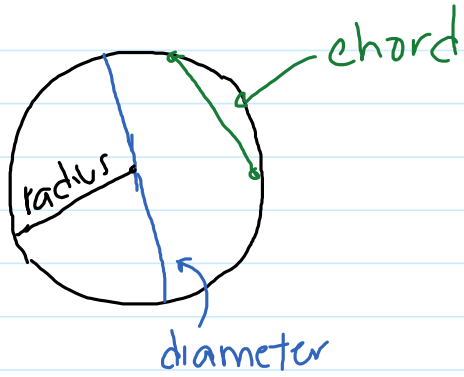
8.2 Properties of Chords in a Circle

June 9, 2015 1:11 PM

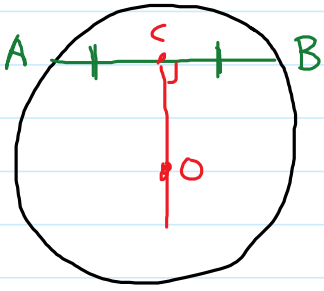
A chord of a circle joins 2 points on the circle



Chord Properties

In any circle with centre O and chord AB

* If OC bisects AB, then OC ⊥ AB



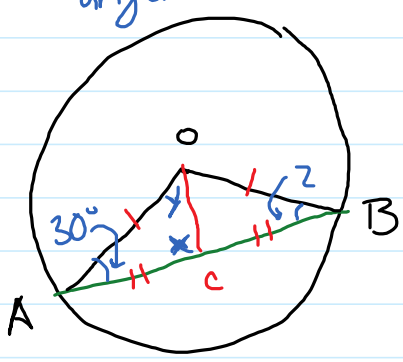
* If OC ⊥ AB, then AC = CB

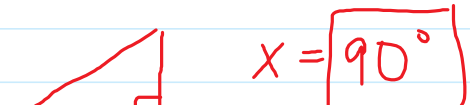
* the perpendicular line of AB goes through the centre O

Ex #1

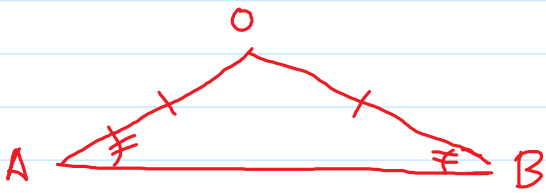
find ∠X, ∠Y and ∠Z

angle





X = 90°

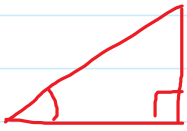


isosceles

∠Z = 30°

isosceles triangle

$\angle Z = \boxed{30^\circ}$

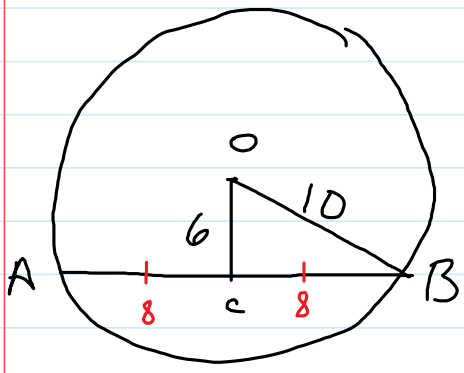


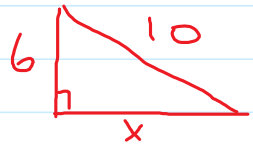
$90 + 30 = 120$

$180 - 120 = \boxed{60^\circ}$

Ex #2

O is the centre
find the length of chord AB





$x^2 + 6^2 = 10^2$

$x^2 + 36 = 100$

$-36 \quad -36$

$\sqrt{x^2} = \sqrt{64}$

$x = 8$

$AB = \boxed{16}$

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