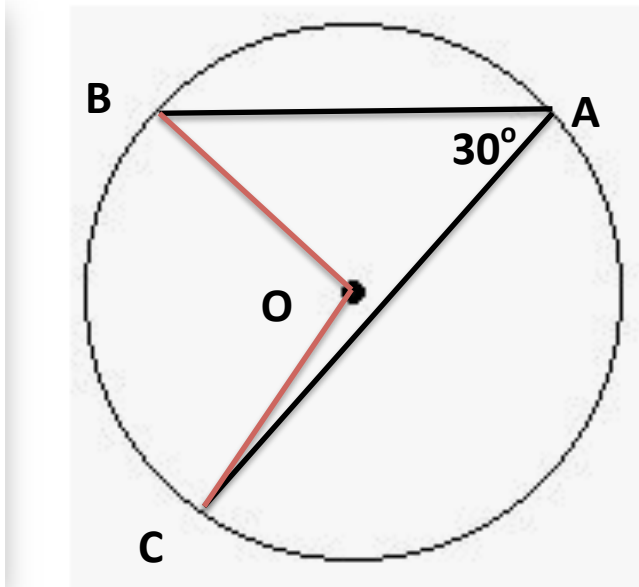


November 24th

Find the radius of a circle in which a chord AB, measuring 4cm, and a chord AC, measuring $10\sqrt{3}$, meet at an angle of 30° .



Using the cosine rule in triangle ABC

$$BC^2 = AB^2 + AC^2 - 2 \times AB \times AC \times \cos 30$$

$$BC^2 = 4^2 + (10\sqrt{3})^2 - 2 \times 4 \times 10\sqrt{3} \times \cos 30$$

$$BC = 14\text{cm}$$

$$\text{Angle } BOC = 60^\circ$$

(since the angle at the centre is twice the angle at the circumference)

\therefore Triangle BOC is equilateral

\therefore Radius = BC = **14cm**