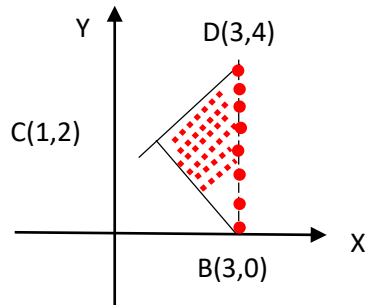


The diameter of a circle



Given B and D on the circle.

$$4 - 0 = 2R$$

$$4 = 2R \Rightarrow R = 2$$

The center of the circle is A (3,2)

The third point on the circle is C (1,2)

The equation of DB is $X = 3$

The equation of the circle $(x - 3)^2 + (y - 2)^2 = 4$

When we want to know $\sphericalangle C$

We have to find slope

$$DC \Rightarrow a = \frac{4-2}{3-1} = 1$$

$$CB \Rightarrow a = \frac{2-0}{1-3} = -1$$

$$1 \cdot (-1) = -1$$

$$a_1 a_2 = -1$$

$$\sphericalangle C = 90^\circ$$

$$\sphericalangle C = 90^\circ, \quad (CD)^2 + (CB)^2 = (DB)^2$$

$$(2^2 + 2^2) + (2^2 + 2^2) = (4 - 0)^2$$

$$8 + 8 = 16$$