

# CIRCLE (BULATAN)

## RADIUS (JEJARI)

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$$\text{Circumference} = 2\pi r$$

$$\text{radius } (r) = \frac{\text{circumference}}{2\pi}$$

**Example 1: Find the radius of the circle if the circumference is 44 cm**

**Solution:**

$$\text{radius } (r) = \frac{\text{circumference}}{2\pi}$$

$$\text{radius} = \frac{44}{2 \times \frac{22}{7}} \quad \text{radius} = 7 \text{ cm}$$

## MENCARI DIAMETER

### Contoh :

Diberi lilitan sebuah bulatan ialah 67.8m. Cari diameter bulatan itu dan bundarkannya kepada dua tempat perpuluhan

(Guna  $\mu = 3.142$ )

### Penyelesaian:

$$\text{Lilitan} = \mu d$$

$$\mu d = 67.8$$

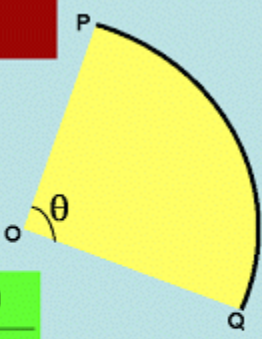
$$d = 67.8 \div \mu$$

$$d = 67.8 \div 3.142$$

$$d = 21.5786$$

$$d = 21.58 \text{ m}$$

## LENGTH OF AN ARC



**LENGTH OF AN ARC**  
(PANJANG LENGKUK)

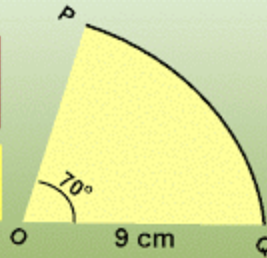
$$\frac{\text{Length of an arc PQ}}{\text{Circumference}} = \frac{\theta}{360^\circ}$$
$$\text{Length of an arc PQ} = \text{circumference} \times \frac{\theta}{360^\circ}$$

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**Example 1: Calculate the arc length PQ**

Use  $\eta = \frac{22}{7}$

**Solution:**



$$\text{Length of PQ} = \text{circumference} \times \frac{\theta}{360^\circ}$$

$$\text{Length of PQ} = 2\eta r \times \frac{\theta}{360^\circ}$$

$$\text{Length of PQ} = 2 \times \frac{22}{7} \times 9 \times \frac{70}{360^\circ}$$

**Length of PQ = 11 cm**

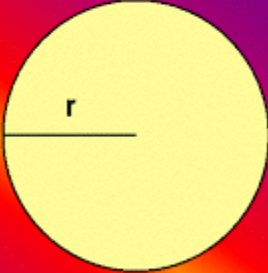
## AREA OF A CIRCLE

**AREA OF A CIRCLE**  
(LUAS SEBUAH BULATAN)

**Area of circle =  $\eta r^2$**

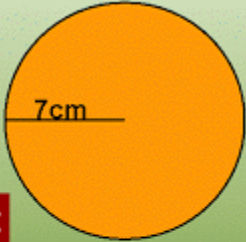
**where  $\eta = \frac{22}{7}$  or 3.142**

**and r = radius (jejari)**



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**Example 1: Calculate area of the circle**



Use  $\eta = \frac{22}{7}$

**Solution:**

**Area of the circle =  $\eta r^2$**

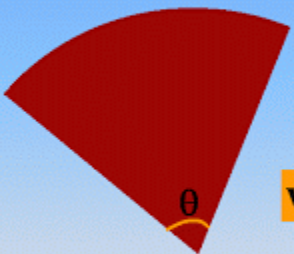
**Area of the circle =  $\frac{22}{7} \times 7^2$**

**Area of the circle =  $154\text{cm}^2$**

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## AREA OF SECTOR

**AREA OF SECTOR**  
(LUAS SEKTOR BULATAN)

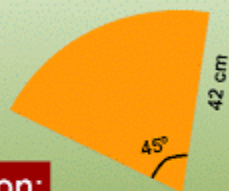


$$\frac{\text{Area of sector}}{\text{Area of circle}} = \frac{\theta}{360}$$

where  $\theta$  = angle subtended

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**Example 1: Calculate area of sector**



Use  $\eta = \frac{22}{7}$

**Solution:**

$$\frac{\text{Area of sector}}{\text{Area of circle}} = \frac{\theta}{360}$$

Area of sector =  $\frac{45}{360} \times$  area of circle

Area of circle =  $\eta r^2$

$$\text{Area of sector} = \frac{45}{360} \times \frac{22}{7} \times 42^2$$

**Area of sector =  $693\text{cm}^2$**

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## ANGLE SUBTENDED (SUDUT PADA PUSAT BULATAN)

**Example 1: Find angle subtended if area of sector is 35 cm<sup>2</sup>**  
 (Cari sudut sektor jika luas sektor ialah 35 cm<sup>2</sup>)

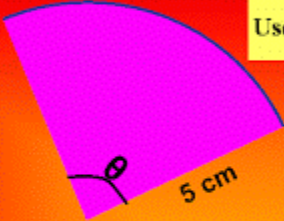
**Solution:**

$$\frac{\theta}{360} = \frac{\text{Area of sector}}{\text{Area of circle}}$$

$$\frac{\theta}{360} = \frac{35}{\frac{22}{7} \times 5^2}$$

$$\theta = \frac{35}{\frac{22}{7} \times 5^2} \times 360$$

Use  $\pi = \frac{22}{7}$



**Angle subtended,  $\theta = 160^\circ$**

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**Example 2: Length of an arc of a circle with the radius 63mm is 110mm. Find the angle subtended of the arc.**  
 (Panjang lengkok suatu bulatan dengan jejari 63mm ialah 110mm. Cari sudut sektor yang dicangkumi oleh lengkok itu)

**Solution:**

$$\frac{\theta}{360} = \frac{\text{Length of arc}}{\text{Circumference}}$$


$$\frac{\theta}{360} = \frac{110}{2 \times \frac{22}{7} \times 63}$$

$$\theta = \frac{110}{2 \times 22 \times 9} \times 360$$

Use  $\pi = \frac{22}{7}$

**Angle subtended,  $\theta = 100^\circ$**

Circumference =  $2\pi r$



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