



1. $\tan \angle MOQ = \frac{6.2}{4}$

$\angle MOQ = 57.170$

Maka/Hence $\angle POQ = 114.34^\circ = 1.996 \text{ rad}$

$OQ = \sqrt{6.2^2 + 4^2} = 7.38 \text{ cm}$

Maka, luas = $\frac{1.996}{2} (7.38)^2 = 54.36 \text{ cm}^2$

Hence, area

2. $\frac{30}{2\pi j} = \frac{\pi j^2 - 80}{\pi j^2}$

$j = \frac{2(\pi j^2 - 80)}{30}$

$\pi j^2 - 80 = 15j$

$\pi j^2 - 15j - 80 = 0$

$j = \frac{15 \pm (-15)^2 - 4\pi(-80)}{2\pi}$

$j = 7.97 \text{ cm}$

3. (a) $18 + 9\theta = 25$

$9\theta = 7$

$\theta = \frac{7}{9}$

(b) Luas/Area = $\frac{1}{2} r^2 \theta$

$= \frac{1}{2} (9)^2 \left(\frac{7}{9} \right) = \frac{63}{2}$

$= 31 \frac{1}{2} \text{ cm}^2$

4. (a) Luas berlorek/Shaded area

$= \frac{1}{2} [15]^2 \theta - \frac{1}{2} [10]^2 \theta = 75$

$225\theta = 150$

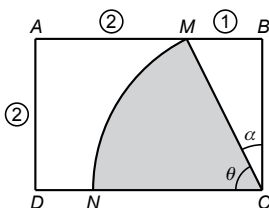
$\theta = 0.667 \text{ rad} = \frac{2}{3} \text{ rad}$

(b) perimeter = $10 \left(\frac{2}{3} \right) + 10 + 15 \left(\frac{2}{3} \right)$

$= \frac{50}{3} + 10$

$= 26 \frac{2}{3} \text{ cm}$

5.



(a) $\tan \alpha = \frac{1}{2}$

$\alpha = 26^\circ 34'$

$\theta = 90^\circ - 26^\circ 34'$

$= 63^\circ 26'$

$= 1.11 \text{ rad}$

(b) $MC = \sqrt{6^2 + 3^2} = \sqrt{45}$

Luas Area = $\frac{1}{2} (\sqrt{45})^2 (1.11)$

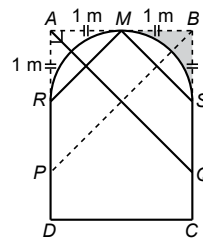
$= 24.91 \text{ cm}^2$

6. (a) $\angle BAQ = 45^\circ$

$AB = BQ = 2 \text{ m}$

$QC = PD = 1 \text{ m}$

(b)



$\tan \angle MQB = \frac{1}{2} = 26^\circ 34'$

$\angle AQM = 45^\circ - 26^\circ 34' = 18^\circ 26'$

$\angle RQM = 2 \times 18^\circ 26' = 36^\circ 52'$

Jejari $MQ = \sqrt{2^2 + 1^2} = 5$

Radius MQ

Panjang lengkok = $\frac{36^\circ 52'}{360^\circ} \times 2\pi(\sqrt{5})$

Arc length

$= 1.439 \text{ m}$

(c) Luas tembereng RM

Area of segment RM

$= \frac{1}{2} (\sqrt{5})^2 (0.64) - \frac{1}{2} (\sqrt{5})^2 \sin 36^\circ 52'$

$= 0.109 \text{ m}^2$

Luas berlorek = $\frac{1}{2} (1)(1) - 0.109$

Shaded area

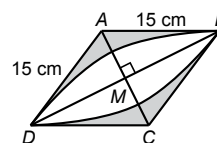
$= 0.391 \text{ m}^2$

Luas pintu = $2 \times 3 - 2(0.391)$

Area of door

$= 5.217 \text{ m}^2$

7. (a)



$$\begin{aligned}\cos/\cos \angle BAM &= \frac{9}{15} \\ \angle BAM &= 53^\circ 8' \\ \angle BAD &= 106^\circ 16' = 1.855 \text{ rad} \\ \angle DCB &= 1.855 \text{ rad}\end{aligned}$$

(b) Luas tembereng/Area of segment

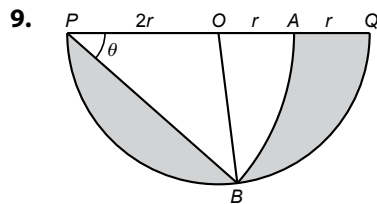
$$\begin{aligned}&= \frac{1}{2}(15)^2(1.855) - \frac{1}{2}(15)^2 \sin 106^\circ 16' \\ &= 100.69 \text{ cm}^2\end{aligned}$$

$$\begin{aligned}\text{Maka, luas berlorek} &= 18 \times 12 - 2(100.69) \\ \text{Hence, the shade area} &= 14.62 \text{ cm}^2\end{aligned}$$

8. (a) $PQ = 10.5 = OP(2.55)$
 $OP = 4.12 \text{ cm}$
 $\therefore OS = 15 - 4.12 = 10.88 \text{ cm}$

(b) $\angle ROS = (\pi - 2.55) \text{ rad}$
 $RS = 10.88(\pi - 2.55)$
 $= 6.44 \text{ cm}$
 $\text{Perimeter} = 15 + 10.5 + 6.44 + (6.44 - 4.12)$
 $= 34.26 \text{ cm}$

(c) $\text{Luas Area} = \frac{1}{2}[6.44]^2[\pi - 2.55]$
 $= 12.27 \text{ cm}^2$

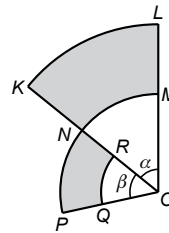


$$\begin{aligned}\text{Perimeter} &= 50 + 20\pi \\ \pi(2r) + 3r + 3r\theta &= 50 + 20\pi \\ 2\pi r + 3r + 3r\theta &= 50 + 20\pi \\ \text{Bandingkan / Compare} \\ 2\pi r &= 20\pi \\ r &= 10 \text{ cm}\end{aligned}$$

(a) $PA = 3r = 30 \text{ cm}$

(b) $3r + 3r\theta = 50$
 $30 + 30\theta = 50$
 $30\theta = 20$
 $\theta = \frac{2}{3} \text{ rad}$

10.



$$\begin{aligned}\text{Perimeter KLMN} &= 2 \text{ perimeter PQRN} \\ \text{Katakan } OQ &= j \\ \text{Maka} &= 2j + 4j\alpha + 2j + 2j\alpha \\ &= 2[j + 2j\beta + j + j\beta] \\ 4j + 6j\alpha &= 2[2j + 3j\beta] \\ &= 4j + 6j\beta \\ \therefore \alpha &= \beta\end{aligned}$$