

p264

1. $r = 6 \text{ cm}; \theta = 0.5$

$$s = r\theta = 6(0.5) = 3 \text{ cm}$$

$$K = \frac{1}{2}r^2\theta = \frac{1}{2}(6)^2(0.5) = 9 \text{ cm}^2$$

② $r = 5; \theta = 3$

$$s = r\theta = 15 \text{ cm}$$

$$K = \frac{1}{2}r^2\theta = \frac{1}{2}(5)^2(3) = 37.5 \text{ cm}^2$$

3. $s = 11 \text{ cm } \theta = 2.2$

$$s = r\theta$$

$$11 = r(2.2)$$

$$r = 5 \text{ cm}$$

$$K = \frac{1}{2}r^2\theta = \frac{1}{2}(5)^2(2.2) = 27.5 \text{ cm}^2$$

④ $s = 2 \text{ cm } \theta = 0.4$

$$s = r\theta \rightarrow 2 = r(0.4) \rightarrow r = 5 \text{ cm}$$

$$K = \frac{1}{2}r^2\theta = \frac{1}{2}(5)^2(0.4) = 5 \text{ cm}^2$$

⑤ $K = 25 \text{ cm}^2 \theta = 0.5$

$$K = \frac{1}{2}r^2\theta$$

$$25 = \frac{1}{2}r^2(0.5)$$

$$25 = 0.25r^2$$

$$r^2 = \frac{25}{0.25} = 100$$

$$r = 10 \text{ cm}$$

$$s = r\theta = 10(0.5) = 5 \text{ cm}$$

⑥ $K = 90 \text{ cm}^2 \theta = 0.2$

$$K = \frac{1}{2}r^2\theta$$

$$90 = \frac{1}{2}r^2(0.2)$$

$$90 = 0.1r^2$$

$$\frac{90}{0.1} = r^2$$

$$r^2 = 900$$

$$r = 30 \text{ cm}$$

$$s = r\theta$$

$$= 30(0.2) = 6 \text{ cm}$$

7. $\theta = 30^\circ; s = 3.5 \text{ cm}$

$$s = \frac{30^\circ}{360^\circ} 2\pi r$$

$$\frac{30^\circ}{360^\circ} 2\pi r$$

$$\frac{6}{\pi} \cdot 3.5 = \frac{\pi r}{6} \cdot \frac{6}{\pi}$$

$$r = \frac{21}{\pi}$$

$$K = \frac{1}{2}rs = \frac{1}{2} \cdot \frac{21}{\pi} \cdot 3.5$$

$$\approx 12 \text{ cm}^2$$

⑧ $\theta = 24^\circ \quad s = 8.4$

$$\frac{24^\circ}{360^\circ} 2\pi r = 8.4$$

$$\frac{15}{2\pi} \cdot \frac{2\pi}{15} r = 8.4 \cdot \frac{15}{2\pi}$$

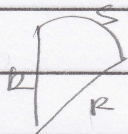
$$r = 8.4 \cdot \frac{15}{2\pi}$$

$$r \approx \frac{63}{\pi}$$

$$K = \frac{1}{2}rs = \frac{1}{2} \cdot \frac{63}{\pi} \cdot 8.4$$

$$\approx 84 \text{ cm}^2$$

9.



$$r+r+s=7 \rightarrow 2r+s=7 \rightarrow s=7-2r$$

$$K = \frac{1}{2}rs$$

$$3 = \frac{1}{2}r(7-2r)$$

$$3 = \frac{7}{2}r - r^2 \rightarrow 6 = 7r - 2r^2$$

$$2r^2 - 7r + 6 = 0$$

$$2r - 3 \quad r \quad (2r-3)(r-2) = 0$$

$$r - 2 \quad r \quad r = \frac{3}{2} \text{ cm} \quad r = 2 \text{ cm}$$

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$$r+r+s=12 \rightarrow 2r+s=12 \rightarrow s=12-2r$$

$$K = \frac{1}{2}rs$$

$$8 = \frac{1}{2}rs$$

$$8 = \frac{1}{2}r(12-2r)$$

$$8 = 6r - r^2$$

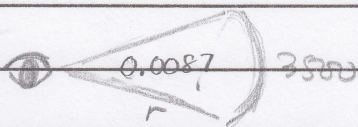
$$r^2 - 6r + 8 = 0 \rightarrow (r-4)(r-2) = 0$$

$$r - 4$$

$$r = 4 \text{ cm}; r = 2 \text{ cm}$$

$$r - 2$$

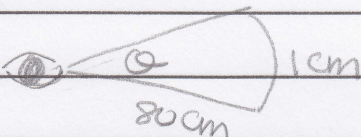
11.



$$s = r\theta$$

$$3500 = 0.0087 \cdot r \rightarrow r \approx 402,298.8506$$

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$$s = r\theta$$

$$1 = 800\theta \rightarrow \theta = 0.0125 \text{ radians}$$

p261

$$\textcircled{a} \quad \frac{-90^\circ}{1} \frac{\pi}{180^\circ} = -\frac{\pi}{2}$$

$$\textcircled{b} \quad \frac{135^\circ}{1} \frac{\pi}{180^\circ} = \frac{3\pi}{4}$$

$$\textcircled{c} \quad \frac{-\pi}{4} \frac{180^\circ}{\pi} = -45^\circ$$

$$\textcircled{d} \quad \frac{7\pi}{4} \frac{180^\circ}{\pi} = 315^\circ$$

$$10 \quad r=4 ; t=5$$

$$t = r\theta$$

$$5 = 4\theta \rightarrow \theta = 1.25$$

$$(b) \quad r=6 ; t=15$$

$$t = r\theta$$

$$15 = 6\theta \rightarrow \theta = 2.5$$

$$14a \quad \frac{2.2}{1} \cdot \frac{180^\circ}{\pi} \approx 126.1^\circ$$

$$(b) \quad \frac{3.7}{1} \cdot \frac{180^\circ}{\pi} \approx 212.0^\circ$$

$$22. \quad 180^\circ 20' + 360^\circ = 540^\circ 20'$$

$$180^\circ 20' - 360^\circ$$

$$-359^\circ 60'$$

$$+ 180^\circ 20'$$

$$\hline -179^\circ 40'$$

$$(b) \quad -270^\circ 30' + 360^\circ$$

$$359^\circ 60'$$

$$- 270^\circ 30'$$

$$\hline 89^\circ 30'$$

$$-270^\circ 30' - 360^\circ = -630^\circ 30'$$

$$24 \quad -116^\circ 10' + n \cdot 360^\circ ; n \text{ is an integer}$$