

4.1 Corrigé Devoir 1

Omnimaths II

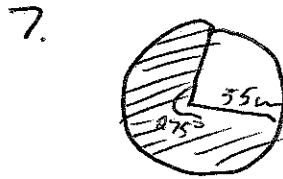
p. 436



$$\frac{\text{Arc}}{\text{Circ}} = \frac{94}{360}$$

$$A = \frac{94}{360} \times \pi(40)^2$$

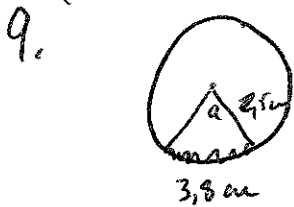
$$A = 1312,5 \text{ cm}^2$$



$$\frac{A}{\pi r^2} = \frac{275}{360}$$

$$A = \frac{275}{360} \times \pi(55)^2$$

$$A = 7259,5 \text{ cm}^2$$

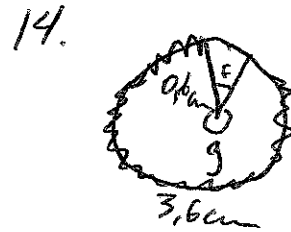


$$\frac{\text{Arc}}{\text{Circ}} = \frac{\angle \text{au centre}}{360^\circ}$$

$$\frac{3,8}{2\pi(2,5)} = \frac{a}{360}$$

$$a = \frac{360 \times 3,8}{2\pi(2,5)}$$

$$a = 87^\circ$$



$$\frac{3,6}{2\pi(0,6)} = \frac{g}{360}$$

$$g = \frac{3,6 \times 360}{2\pi(0,6)}$$

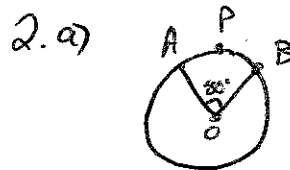
$$g = 344^\circ$$

$$F = 360 - 344$$

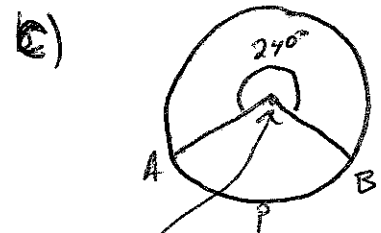
$$F = 16^\circ$$

Visiões
pp. 477-479

1. a) $C = 2\pi r$
 $C = 2\pi(3,4)$
 $C = 21,36 \text{ cm}$



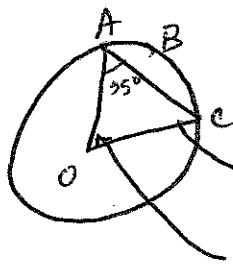
$$\widehat{APB} = 80^\circ$$



$$360^\circ - 240^\circ = 120^\circ$$

$$\widehat{APB} = 120^\circ$$

3. a)



$OA = OC$ (rayons)

55° (Δ isocèle)

$180 - 55 - 55$

$= 70^\circ$ (\angle dans Δ)

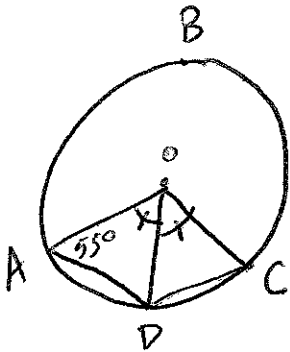
$\widehat{ABC} = 70^\circ$

$$\frac{70}{360} = \frac{\text{Arc}}{2\pi(3,8)}$$

$$\text{Arc} = \frac{70}{360} \times 2\pi(3,8)$$

$$\boxed{\text{Arc} = 4,64 \text{ cm}}$$

d)



$OA = OD = OC$ (Rayons)

$\angle ADO = 55^\circ$ (Δ isocèle)

$\angle AOD = 180 - 55 - 55$
 $= 70^\circ$ (\angle dans Δ)

$\angle DOC = 70^\circ$

$\angle AOC = 70 + 70$
 $= 140^\circ$

$\widehat{ABC} = 360 - 140$
 $= 220^\circ$

$$\frac{\text{Arc}}{\text{Circ}} = \frac{220}{360}$$

$$\frac{\text{Arc}}{24,2} = \frac{220}{360}$$

$$\text{Arc} = \frac{220}{360} \times 24,2$$

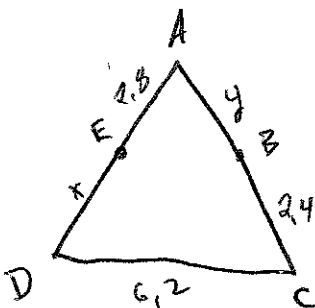
$$\boxed{\text{Arc} = 14,79 \text{ cm}}$$

5a) ①

$\angle AEB = \angle ADC$ (hyp)

$\angle EAB = \angle DAC$ (\angle commun)

$\Delta EAB \sim \Delta DAC$ (AA)



② $\frac{AE}{AD} = \frac{EB}{DC}$

$$\frac{2,8}{x+2,8} = \frac{3,1}{6,2}$$

$$2,8(6,2) = 3,1(x+2,8)$$

$$17,36 = 3,1x + 8,68$$

$$8,68 = 3,1x$$

$$\boxed{2,8 = x}$$

$$\frac{AB}{AC} = \frac{EB}{DC}$$

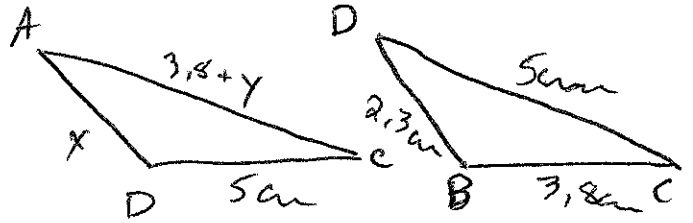
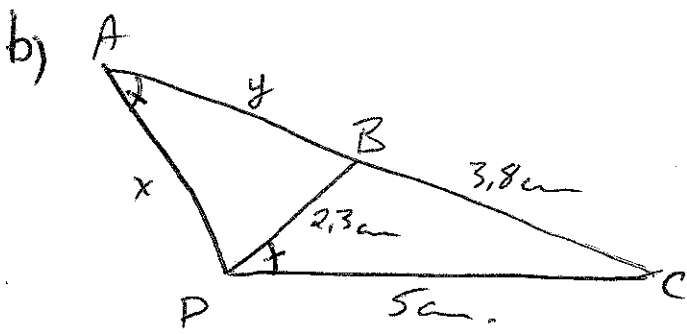
$$\frac{y}{y+2,9} = \frac{3,1}{6,2}$$

$$6,2y = 3,1(y+2,9)$$

$$6,2y = 3,1y + 7,44$$

$$3,1y = 7,44$$

$$\boxed{y = 2,4}$$



$$\angle DAB = \angle BDC \quad (\text{hyp})$$

$$\angle DCA = \angle BCD \quad (\angle \text{common})$$

$$\triangle ACD \sim \triangle DCB \quad (\text{AA})$$

$$\textcircled{2} \frac{AD}{DB} = \frac{DC}{BC} \quad \frac{x}{2.3} = \frac{5}{3.8}$$

$$\boxed{x = 3.02 \text{ cm}}$$

$$\textcircled{1} \frac{DC}{AC} = \frac{BC}{DC}$$

$$\frac{2.3}{5} = \frac{3.8}{DC}$$

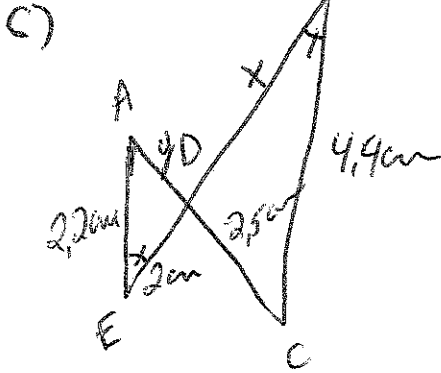
$$2.3 \cdot DC = 19$$

$$DC = \frac{19}{2.3} = 8.26$$

$$2.5 = 14.44 + 3.8y$$

$$10.56 = 3.8y$$

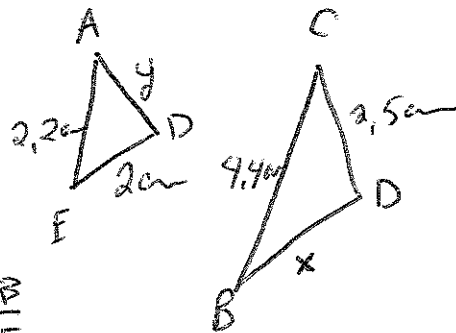
$$2.79 = y$$



$$\angle CBD = \angle AED \quad (\text{hyp})$$

$$\angle ADE = \angle CDB \quad (\text{opp. par le sommet})$$

$$\triangle AED \sim \triangle CBD \quad (\text{AA})$$



$$\frac{BD}{DE} = \frac{CB}{AE}$$

$$\frac{x}{2} = \frac{4.4}{2.2}$$

$$\boxed{x = 4 \text{ cm}}$$

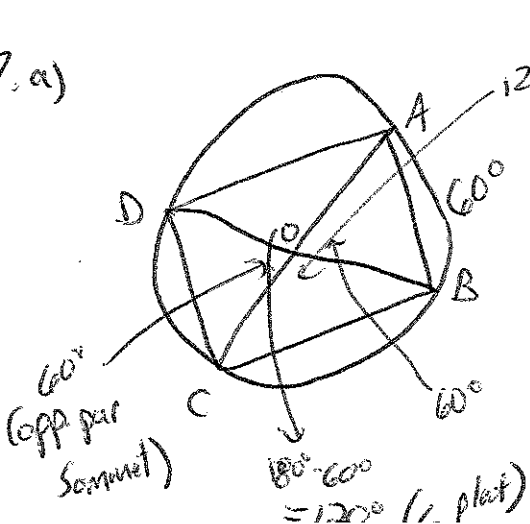
$$\frac{AD}{CD} = \frac{AE}{CB}$$

$$\frac{y}{2.5} = \frac{2.2}{4.4}$$

$$y = \frac{2.2 \times 2.5}{4.4}$$

$$\boxed{y = 1.25 \text{ cm}}$$

7. a)



120° (opp. par le sommet)

$$\widehat{AD} = 120^\circ$$

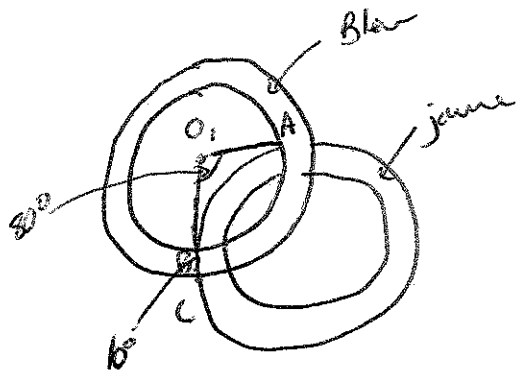
$$\widehat{CD} = 60^\circ$$

$$\widehat{BC} = 120^\circ$$

60° (opp. par sommet)

180° - 60° = 120° (1. plat)

p. 472 Réactivation 1



Petit cercle : $r_1 = 11 \text{ cm}$

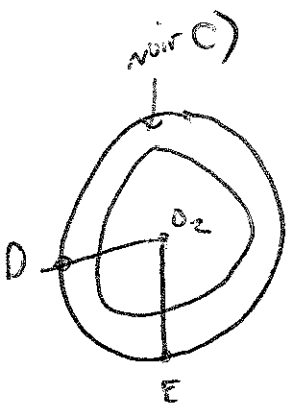
Grand cercle : $C_2 = 27\pi \text{ cm}$

a) 1) $C_2 = 2\pi r_2$
 $\frac{27\pi}{2\pi} = \frac{2\pi r_2}{2\pi}$
 $r_2 = 13,5 \text{ cm}$

2) $A_{\text{jaune}} = A_2 - A_1$
 $= \pi(13,5)^2 - \pi(11)^2$
 $= 182,25\pi - 121\pi$
 $A = 61,25\pi \text{ cm}^2$
 ou
 $A = 192,42 \text{ cm}^2$

b) 1) $\frac{\widehat{AB}}{2\pi r^2} = \frac{80^\circ}{360^\circ}$
 $\widehat{AB} = \frac{80}{360} \times 2\pi(11)$
 $\widehat{AB} = 15,4 \text{ cm}$

2) $\frac{\widehat{BC}}{2\pi r} = \frac{10^\circ}{360^\circ}$
 $\widehat{BC} = \frac{10}{360} \times 2\pi(13,5)$
 $\widehat{BC} = 2,36 \text{ cm}$



$\widehat{DE} = 4,2 \text{ cm}$
 $\frac{4,2\pi}{2\pi(13,5)} = \frac{\angle DO_2E}{360^\circ}$
 $\frac{4,2\pi \times 360}{27\pi} = \angle DO_2E$
 $\angle DO_2E = 56^\circ$

d) Puisque les deux arcs ont la même mesure, les 2 angles au centre sont égaux.