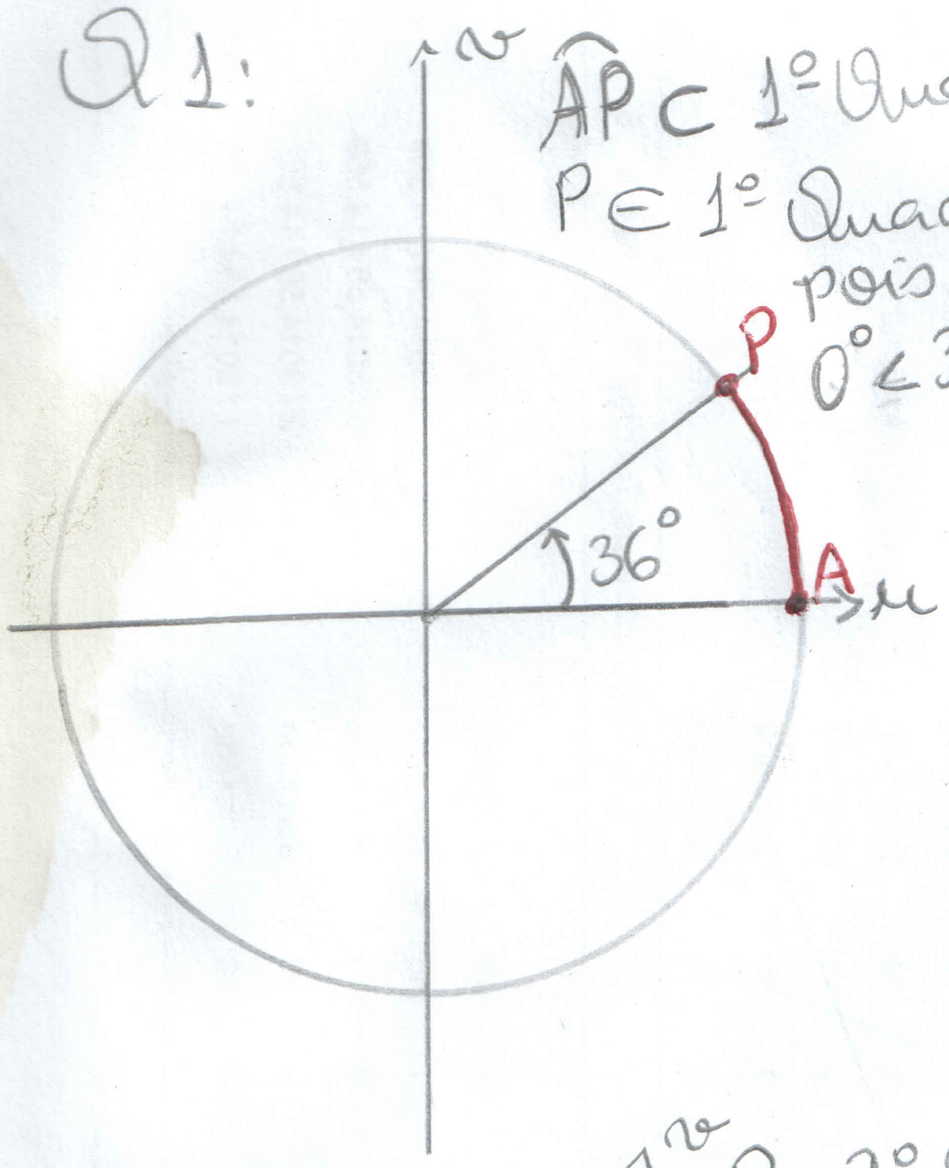
Lista de Atividades 4

Q1:

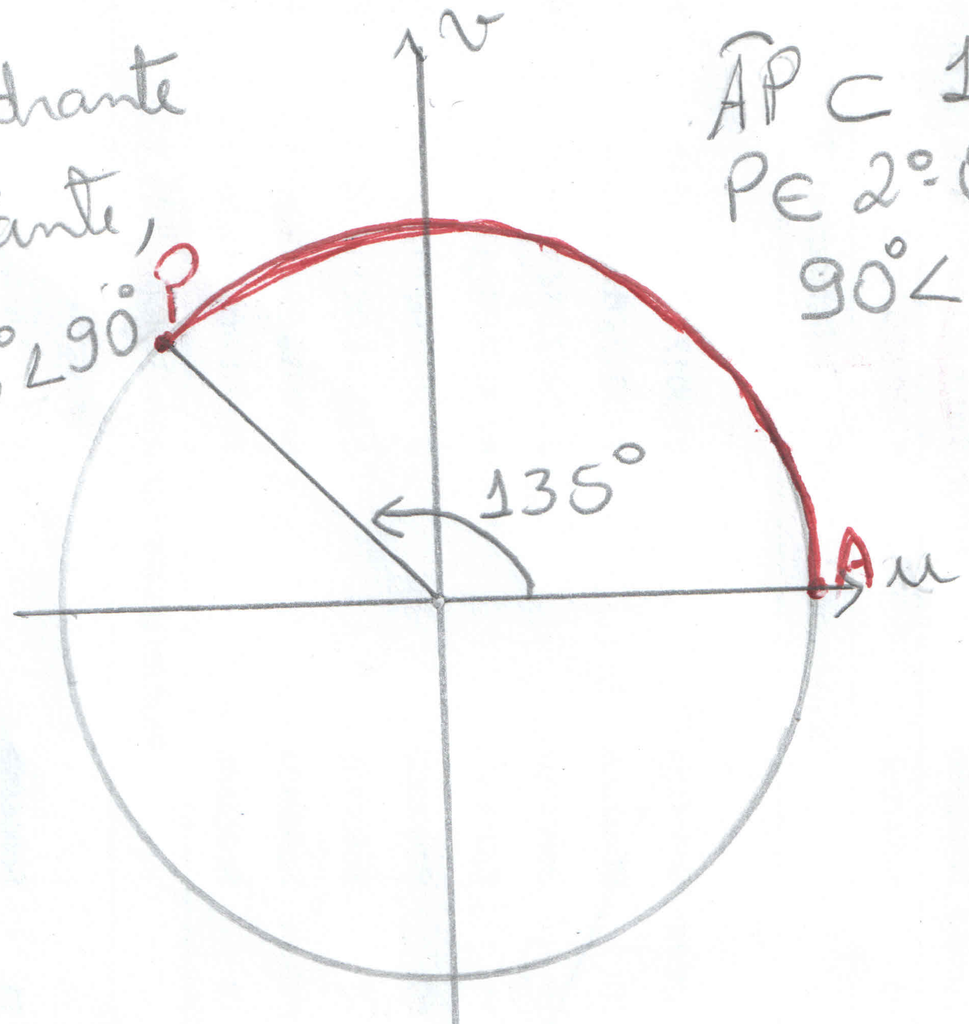
$\widehat{AP} \subset$ 1º Quadrante

$P \in$ 1º Quadrante, pois $0° < 36° < 90°$

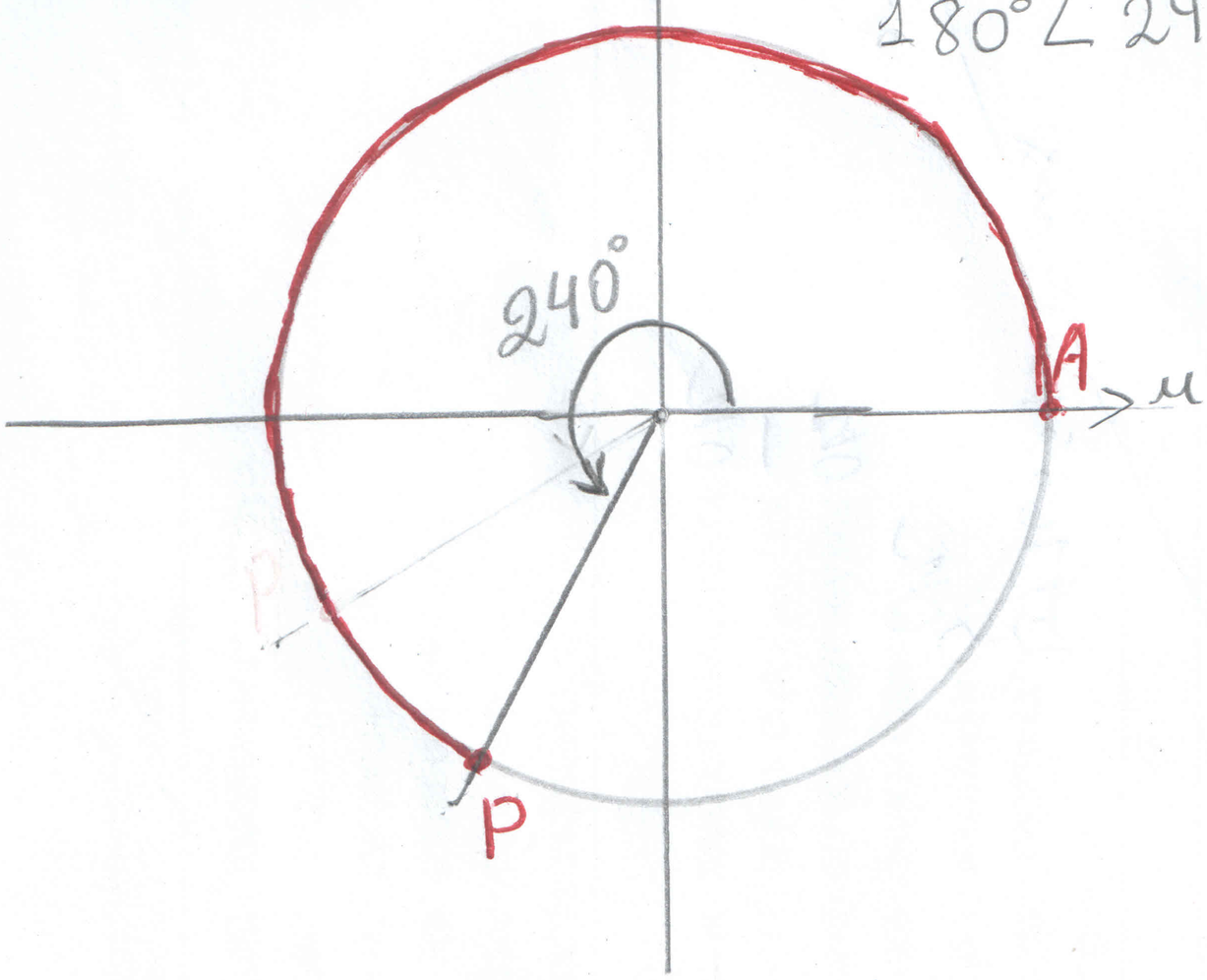


$\widehat{AP} \subset$ 1ºQ $\cup$ 2ºQ

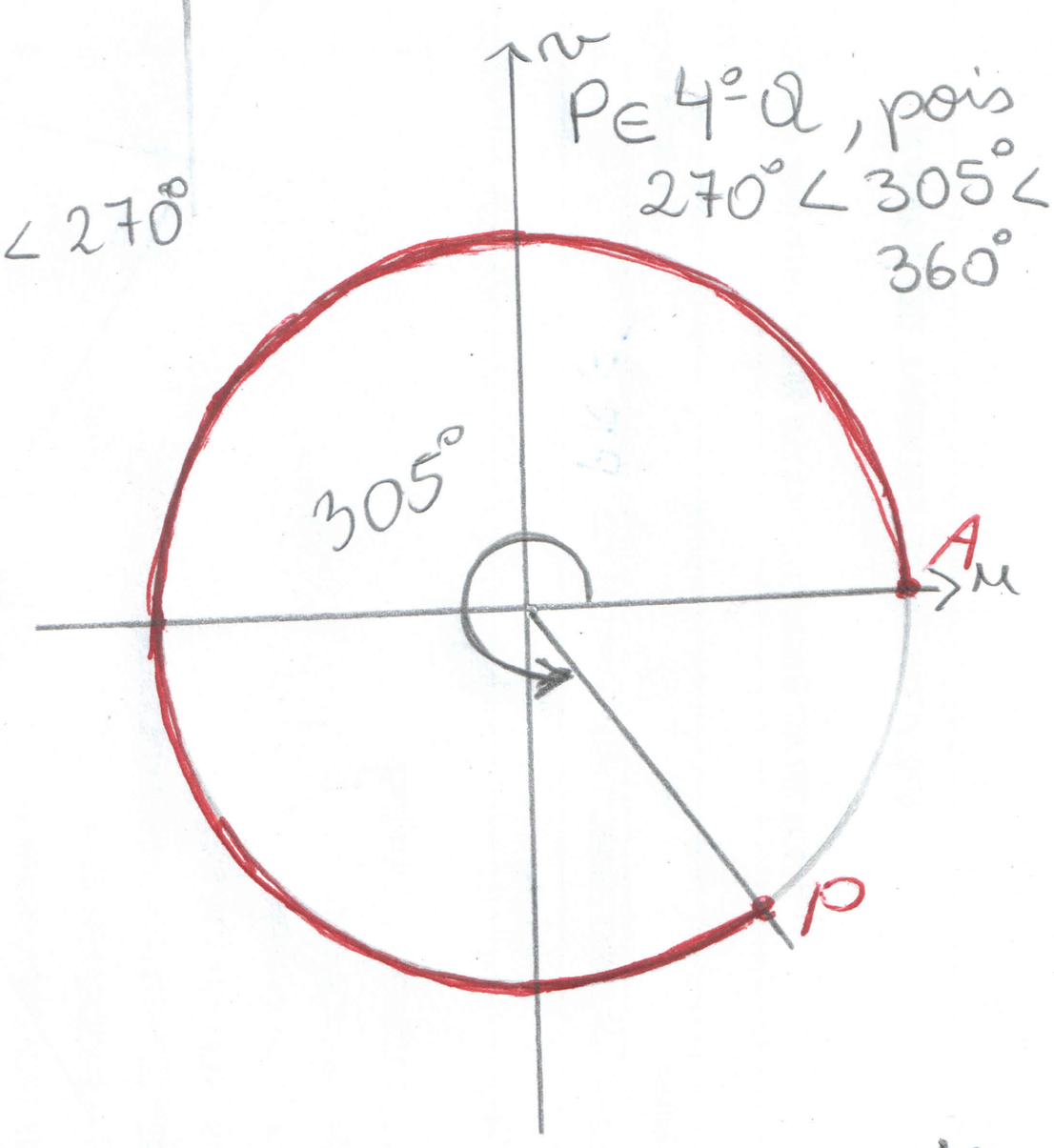
$P \in$ 2º Q., pois $90° < 135° < 180°$



$P \in$ 3º Q, pois $180° < 240° < 270°$

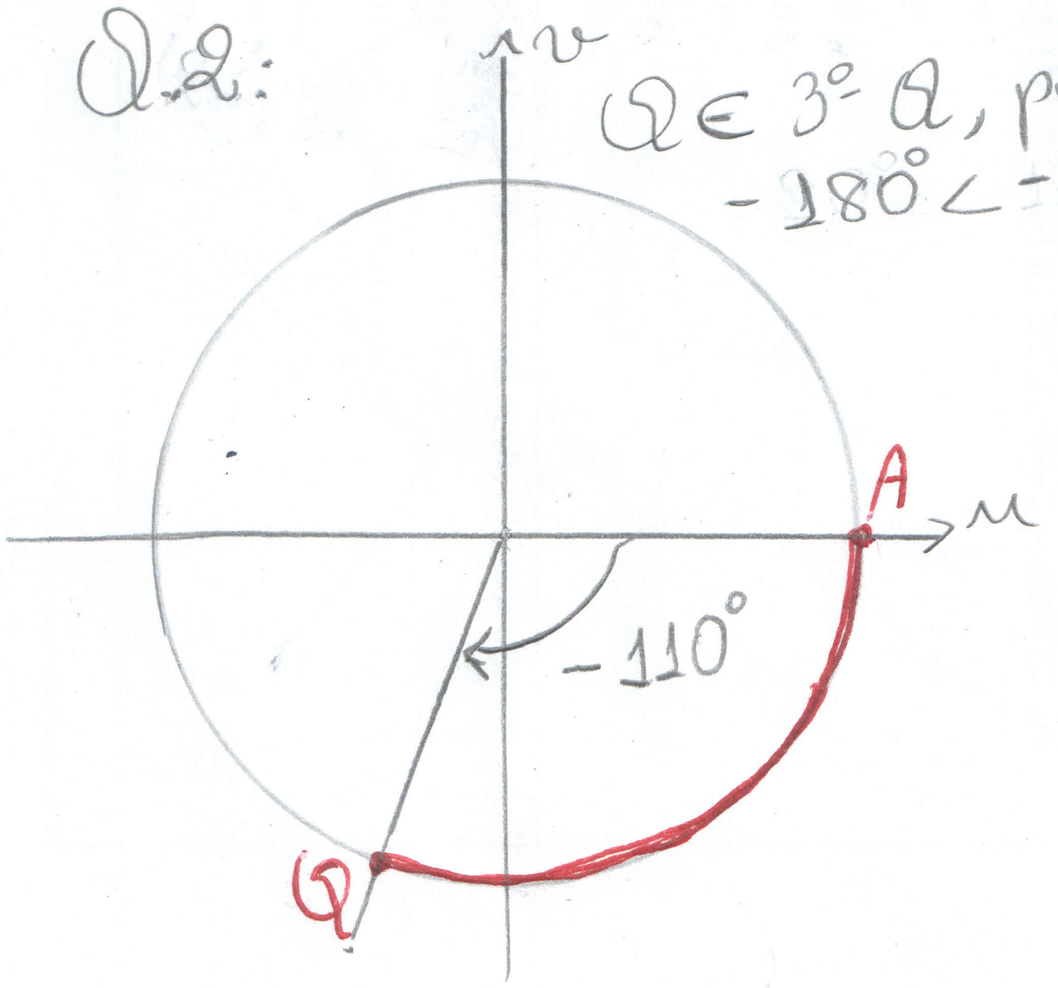


$P \in$ 4º Q, pois $270° < 305° < 360°$

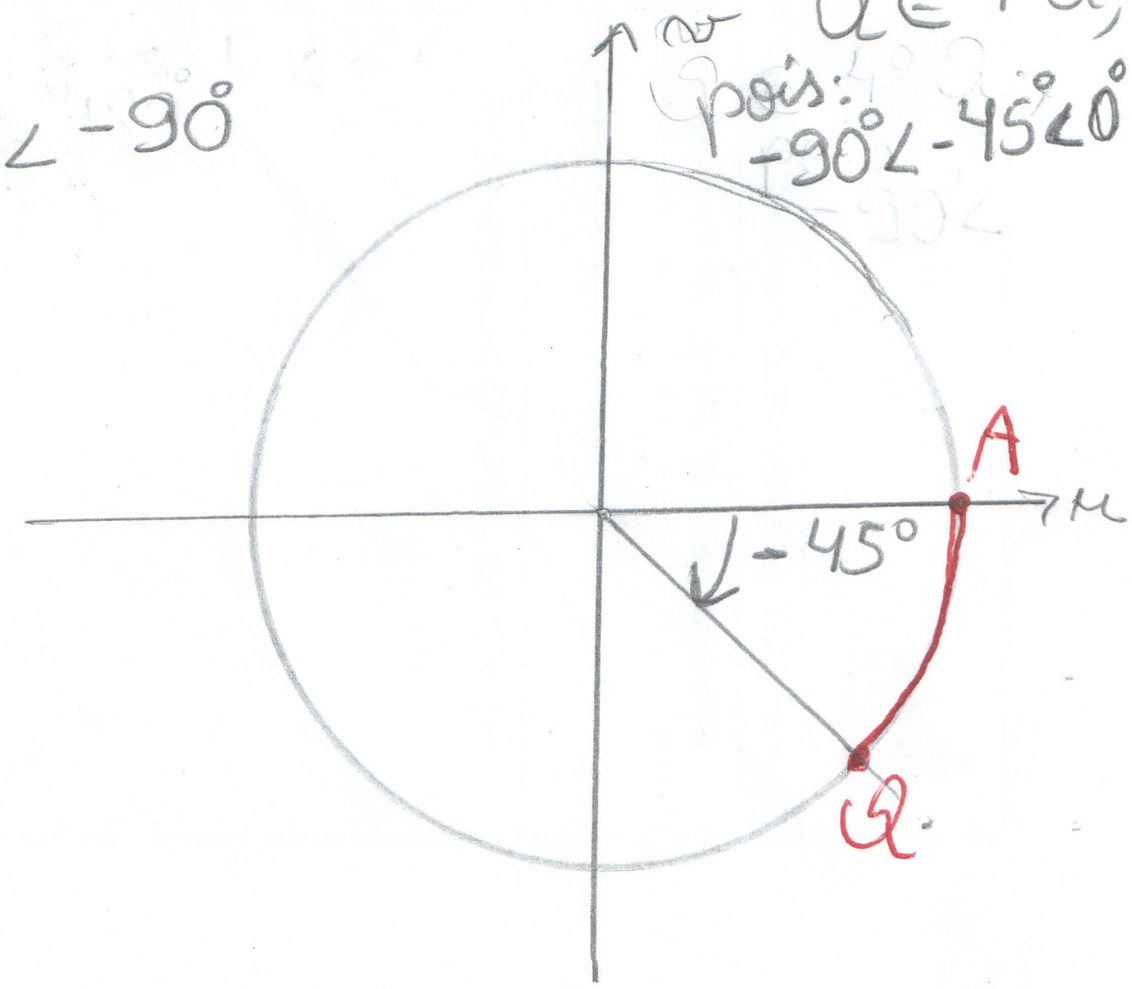


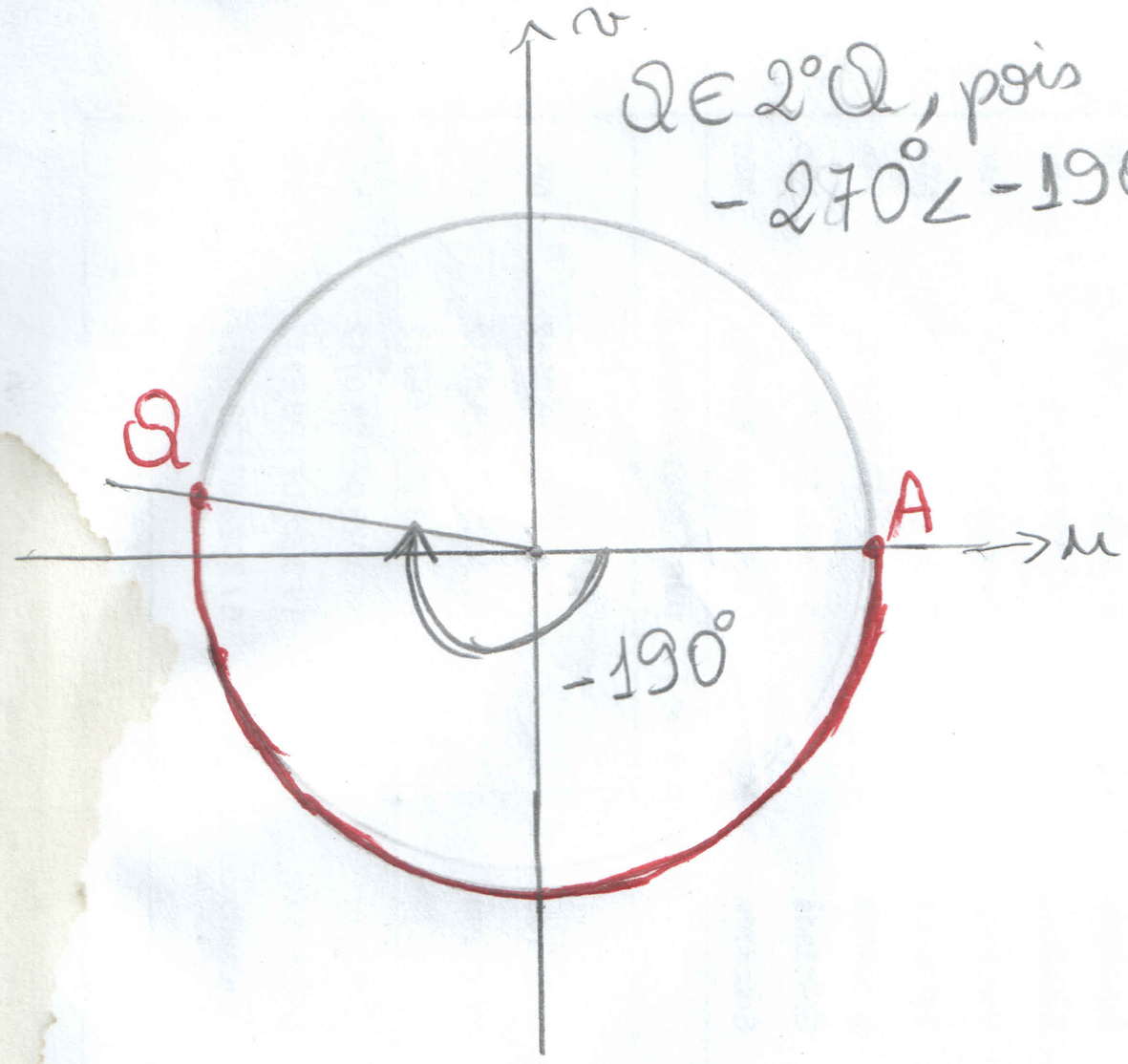
Q.2:

$Q \in$ 3º Q, pois $-180° < -110° < -90°$



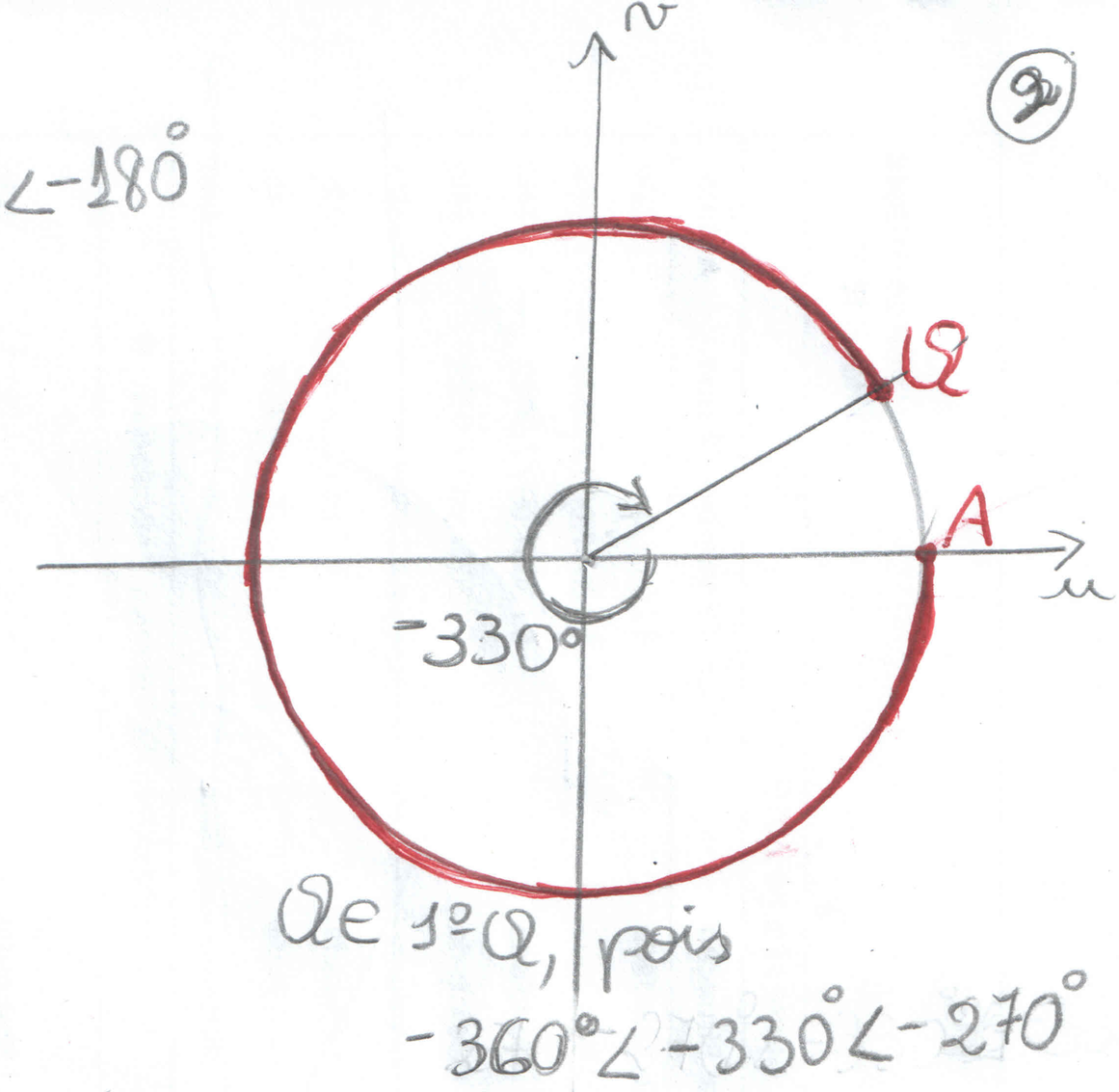
$Q \in$ 4º Q, pois: $-90° < -45° < 0°$





$Q \in 2^{\circ}Q$, pois

$-270^{\circ} < -190^{\circ} < -180^{\circ}$



$Q \in 1^{\circ}Q$, pois

$-360^{\circ} < -330^{\circ} < -270^{\circ}$

Q3: $1^{\circ} = \frac{\pi}{180}$

a) $70^{\circ} = 70 \cdot 1^{\circ} = 7\cancel{0} \cdot \frac{\pi}{18\cancel{0}} = \frac{7\pi}{18}$ rad

b) $146^{\circ} = 146 \cdot 1^{\circ} = \overset{\div 2}{146} \cdot \frac{\pi}{\underset{\div 2}{180}} = \frac{73\pi}{90}$ rad

c) $258^{\circ} = 258 \cdot 1^{\circ} = \overset{\div 6}{258} \cdot \frac{\pi}{\underset{\div 6}{180}} = \frac{43\pi}{30}$ rad

d) $340^{\circ} = 340 \cdot 1^{\circ} = \overset{\div 2}{34\cancel{0}} \cdot \frac{\pi}{18\cancel{0}_{\div 2}} = \frac{17\pi}{9}$ rad

Q4: $1 \text{ rad} = \frac{180^{\circ}}{\pi}$

a) $\frac{\pi}{5}$ rad $= \frac{\cancel{\pi}}{5} \cdot \frac{180^{\circ}}{\cancel{\pi}} = \frac{180^{\circ}}{5} = 36^{\circ}$

b) $\frac{6\pi}{5}$ rad $= \frac{6\cancel{\pi}}{5} \cdot \frac{180^{\circ}}{\cancel{\pi}} = 6 \cdot 36^{\circ} = 216^{\circ}$

$1^{\circ} = 60'$

$0{,}5^{\circ} = 30'$

c) $\frac{8\pi}{7}$ rad $= \frac{8\cancel{\pi}}{7} \cdot \frac{180^{\circ}}{\cancel{\pi}} \approx 205{,}71^{\circ} \approx 205^{\circ}\,43'$

$1^{\circ} \rightarrow 60'$

$0{,}71^{\circ} \rightarrow x$

$x = \frac{60' \cdot 0{,}71^{\circ}}{1^{\circ}}$

$x \approx 43'$

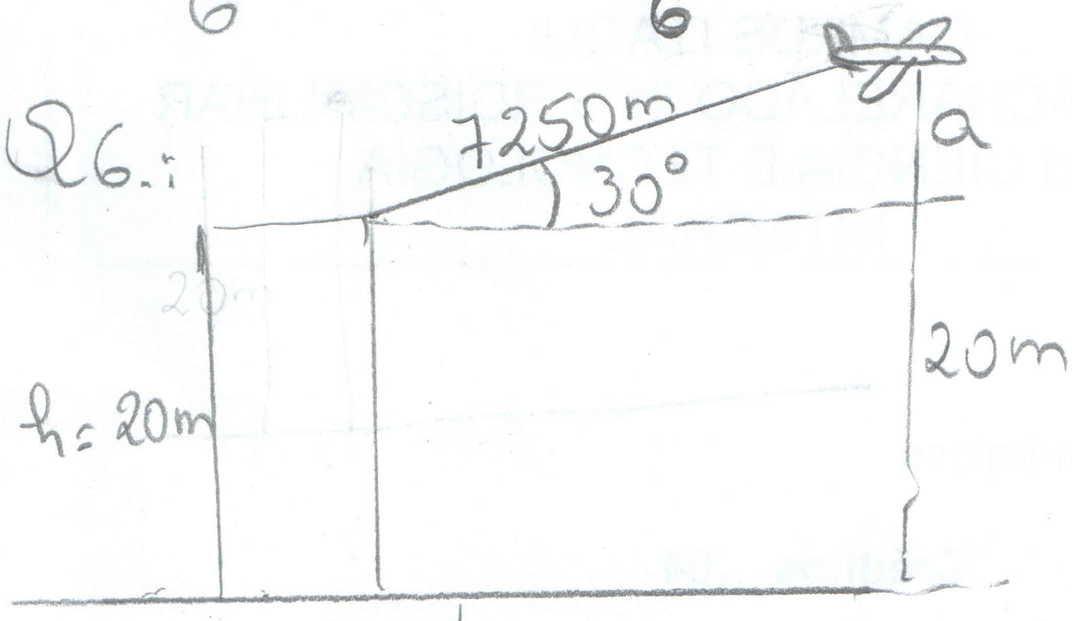
d) $\frac{13\pi}{8}$ rad $= \frac{13\cancel{\pi}}{8} \cdot \frac{180^{\circ}}{\cancel{\pi}} = 292{,}5^{\circ} \approx 292^{\circ}\,30'$

Q5: $s = r \cdot \theta \Rightarrow \theta = 26^{\circ} = 26 \cdot 1^{\circ} = \overset{\div 2}{26} \cdot \frac{\pi}{\underset{\div 2}{180}} = \frac{13\pi}{90}$ rad

$s = \frac{13\pi}{90} \cdot r \Rightarrow s \approx \frac{13 \cdot 3{,}14 \cdot r}{90} \Rightarrow s \approx 0{,}45 \cdot r$

$\theta = \frac{7\pi}{6} \Rightarrow S = \frac{7\pi}{6} \cdot r \Rightarrow S \approx \frac{7 \cdot 3{,}14 \cdot r}{6} \Rightarrow S \approx 3{,}67r$

Q6.:



$\text{sen } 30° = \frac{a}{7250}$

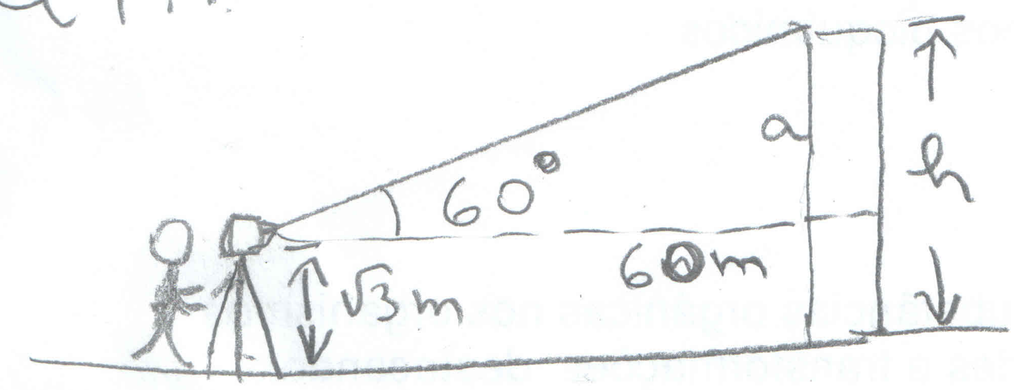
$\frac{1}{2} = \frac{a}{7250} \Rightarrow a = \frac{7250}{2}$

$a = 3625m$

A altura do avião em relação ao solo é

$3625 + 20 = 3645m.$

Q7:



$h = a + \sqrt{3}m$

$\tan 60° = \frac{a}{60} \Rightarrow \sqrt{3} = \frac{a}{60} \Rightarrow a = 60\sqrt{3}m$

$h = 60\sqrt{3} + \sqrt{3} = 61\sqrt{3}m$