



Name / Nom: .....

Class / Classe: .....

Date / Date: .....

Test in/Examen de: Mathematics

9<sup>th</sup> Grade

Time / La durée : .....

2018-2019

*Correction standards  
of 1<sup>st</sup> Trial*

Ex-1.

Part-A:

$$\rightarrow OC = \sqrt{\frac{81 \times 3^3}{9^4}} - \sqrt{\frac{8^2 + 6^2 + 8}{2}} + \sqrt{(\sqrt{37}-1)(\sqrt{37}+1)}$$

$$= \sqrt{\frac{9^4 \times 3^3}{9^4}} - \sqrt{\frac{64 + 36 + 8}{2}} + \sqrt{(\sqrt{37})^2 - 1^2}$$

$$= 3\sqrt{3} - \sqrt{108} + \sqrt{36}$$

$$= 3\sqrt{3} - \sqrt{6^2 \times 3} + \sqrt{6^2}$$

$$= 3\sqrt{3} - 3\sqrt{3} + 6$$

Thus,  $OC = 6 \text{ cm}$

$$2) AC = \left( \sqrt{\frac{3}{2}} + \frac{1}{\sqrt{2}} \right)^2 - 2(1 - \sqrt{3})$$

$$= \left( \sqrt{\frac{3}{2}} \right)^2 + 2 \left( \frac{\sqrt{3}}{\sqrt{2}} \right) \left( \frac{1}{\sqrt{2}} \right) + \left( \frac{1}{\sqrt{2}} \right)^2 - 2 + 2\sqrt{3}$$

$$= \frac{3}{2} + \frac{2\sqrt{3}}{2} + \frac{1}{2} - 2 + 2\sqrt{3}$$

$$= 2 + \sqrt{3} - 2 + 2\sqrt{3}$$

Thus,  $AC = 3\sqrt{3} \text{ cm}$

3) In  $\triangle OAC$  we have

(d) is tangent to (s) at A (given)

[OA] is radius of (s) (given)

So,  $\hat{OAC} = 90^\circ$  (Tangent theorem:

angle formed between radius & tangent)

Then,  $\triangle OAC$  is right at A.

So, by pythagorean theorem

$$\text{hyp}^2 = \text{leg}_1^2 + \text{leg}_2^2$$

$$\text{so, } OC^2 = OA^2 + AC^2$$

$$\text{Then, } OA^2 = OC^2 - AC^2$$

$$= 6^2 - (3\sqrt{3})^2$$

$$\text{so } OA^2 = 9$$

Thus,  $OA = R = 3 \text{ cm}$  (accepted)