Lycee Des Arts
Hadat: Rue Jamous

Grade / La note

Name / Nom:
Class / Classe: 9th Grade
Date / Date: Jan, 7th 2020

Test in/Examen de: Math.
Time / La durée : 120 min.

Correction standards
Trial-1.

Ex-1 1) To locate position B wrt (C) of center O & radius [OA] then, we compare OA & OB.

$OA = \left(\frac{1-\sqrt{5}}{4}\right)^2 + \frac{\sqrt{5}}{8}$ (given)

$= \frac{1^2 - 2(1)(\sqrt{5}) + (\sqrt{5})^2}{16} + \frac{\sqrt{5}\times 2}{8\times 2}$

$= \frac{6 - 2\sqrt{5} + 2\sqrt{5}}{16}$

$OA = \frac{6}{16} = \frac{3}{8}$

$OB = \frac{\sqrt{3^2\times 5} - \sqrt{4^2\times 5} + 2\sqrt{5^2\times 5}}{\sqrt{7}\times\sqrt{7\times 5} - 7\sqrt{5} + 3} \times \frac{1}{2\sqrt{5}}$

$= \frac{3\sqrt{5} - 4\sqrt{5} + 10\sqrt{5}}{7\sqrt{5} - 7\sqrt{5} + 3} \times \frac{1}{2\sqrt{5}}$

$= \frac{9\sqrt{5}}{3} \times \frac{1}{2\sqrt{5}}$

$OB = \frac{3}{2}$

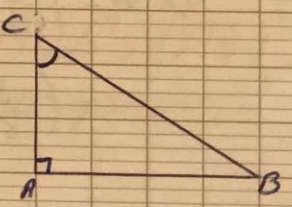
hence, $OB > OA$ (comparing two fractions with same numerator, the one with the greater denominator is less.

Thus, B is exterior to (C), since distance between B & center of (C) is greater than its radius. C

2) ΔABC is right at A. (given)

$\sin B\hat{C}A = 2 \sin A\hat{B}C$ (given

$\frac{\text{opp to } \hat{C}}{\text{hyp}} = 2\left(\frac{\text{opp to } \hat{B}}{\text{hyp}}\right)$ $\text{hyp} \neq 0$



So, $AB = 2AC$

using pythagorean theorem:

$hyp^2 = leg_1^2 + leg_2^2$

$BC^2 = AC^2 + AB^2$

$BC^2 = AC^2 + (2AC)^2$

$= AC^2 + 4AC^2$

Thus, $BC^2 = 5AC^2$ b