2) In ΔAMO we have:

- $AO = OM$ (radii of the same semicircle are equal).
- H is the midpoint of AO (given).

The perpendicular [MH] to (AB) cuts AO at its midpoint H.

So, (MH) is the perpendicular bisector of [AO].

So, M is equidistant from A & O

$AM = MO$.

Then, $AM = MO = OA$.

Thus, ΔAMO is equilateral having 3 equal sides.

- $AM = \text{radius} = \frac{\text{diameter}}{2} = \boxed{6}$ cm.
- Apply Pythagorean theorem in right ΔAMH at H:

$MA^2 = MH^2 + HA^2$

$MH^2 = 6^2 - 3^2$

$MH^2 = 36 - 9$

$\sqrt{MH^2} = \sqrt{25}$

(+) $MH = \boxed{5}$ cm

accepted

3) - In ΔAMB we have:

$A\hat{M}B$ is an inscribed angle facing diameter in (C).

So, $A\hat{M}B = 90°$.

But $M\hat{A}B = 60°$ (angle of equilateral Δ).

Then ΔAMB is semi equilateral. (right + 60°).

- ~~Apply pythagor~~ [MB] is the side facing 60°

in ΔAMB = $\text{hyp} \times \frac{\sqrt{3}}{2}$

$= \frac{12\sqrt{3}}{2}$

$MB = 6\sqrt{3}$ cm

$MB \simeq 10.392$ cm.