Thus, $ED = 3x$

Now, From ratios ⓐ & ⓒ.

$\frac{OB}{OE} = \frac{BC}{DE}$.

so, $\frac{6}{OE} = \frac{2}{3x}$.

Thus, $OE = 18$ units of length.

4a): For triangle ODE to be right
then we can use pythagorean theorem.

$OE^2 = OD^2 + ED^2$.

$18^2 = 6^2 + 9x^2$.

$324 = 36 + 9x^2$

Thus, $9x^2 = 288$.

4b) If (DE) is tangent to (C) at D.
then. $O\hat{D}E = 90°$ (Tangent theorem: angle formed between tangent and radius is right)

hence $9x^2 = 288$ is valid

so $x^2 = 32$

$x = \pm 4\sqrt{2}$ but $x > 0$.

Thus $x = 4\sqrt{2}$.

5. In $\triangle OMA$:

$OM = OA$ (radii of (C))

So, $\triangle OMA$ is isosceles of vertex O (having two equal sides)

I is midpt of [AM] (Given)

So, [OI) is a median relative to [AM]