4) case of increase then decrease:

$$\text{final price} = \left(1 + \frac{\%\text{ increase}}{100}\right)\left(1 - \frac{\%\text{ decrease}}{100}\right) \times \text{initial price}$$

$$\frac{\text{final price}}{\text{initial price}} = \left(1 + \frac{25}{100}\right)\left(1 - \frac{\%d}{100}\right)$$

But final price equals initial price ✓

Then, $(1 + 0.25)\left(1 - \frac{\%d}{100}\right) = 1$ ✓

$$(1.25)\left(1 - \frac{\%d}{100}\right) = 1$$ ✓

$$1 - \frac{\%d}{100} = \frac{1}{1.25}$$ ✓

$$1 - \frac{\%d}{100} = 0.8$$

$$\frac{\%d}{100} = 1 - 0.8$$

$$\frac{\%d}{100} = 0.2$$ ✓

$$\%d = 20\%$$ (B) ✓

5) (TA) & (TB) are two tangents to (C) at A & B resp (given)

So, TA = TB (Tangent theorem: pt of intersection of 2 tangents is equidistant from pts of tangency)

Then TA = 4 ✓

But (OA) is a radius of (C) (given)

So, $\hat{TAO} = 90°$ (Tangent theorem: angle between tangent & radius is 90°) ✓

Then $\triangle TAO$ is right at A

use pythagorean theorem

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

$$\overline{TO}^2 = \overline{TA}^2 + \overline{OA}^2$$

$$TO^2 = 4^2 + 3^2$$

$$TO^2 = 25$$

$$TO = 5\text{cm}$$ ✓