4- $x = \sqrt{5}+1$ is a root of $P(x)$ (given)

then, $P(\sqrt{5}+1) = 0$

$(\sqrt{5}-1)^2 + 3(\sqrt{5}-1) - a = 0$

$5 + 2\sqrt{5} + 1 + 3\sqrt{5} - 3 - a = 0$

$3 + \sqrt{5} - a = 0$

$-a = -3 - \sqrt{5}$

$(-a = -(3+\sqrt{5}))\ (-)$

$a = 3 + \sqrt{5}$

So, (a)

5- * In Δ AOC we have:

$OC = OA$ (radii of same circle)

then, AOC is an isos. Δ at O

so, $O\hat{A}C + O\hat{C}A + C\hat{O}A = 180°$

but $O\hat{A}C = O\hat{C}A = 20°$ (base angles of an isos. Δ)

then $2(20°) + C\hat{O}A = 180°$

$C\hat{O}A = 180° - 40°$

$C\hat{O}A = 140°$.

mes $\overset{\frown}{ADC} = C\hat{O}A = 140°$ (central angle intercepting arc ADC)

but D is the midpt. of arc $\overset{\frown}{AC}$ (given)

then, mes $\overset{\frown}{AD} = \frac{\text{mes } \overset{\frown}{ADC}}{2}$

$= \frac{140°}{2}$

mes $\overset{\frown}{AD} = 70°$

$x\hat{D}A = \frac{\text{mes } \overset{\frown}{AD}}{2}$ (angle formed by tangent & chord)

$= \frac{70°}{2}$

$x\hat{D}A = 35°$

So, (A)