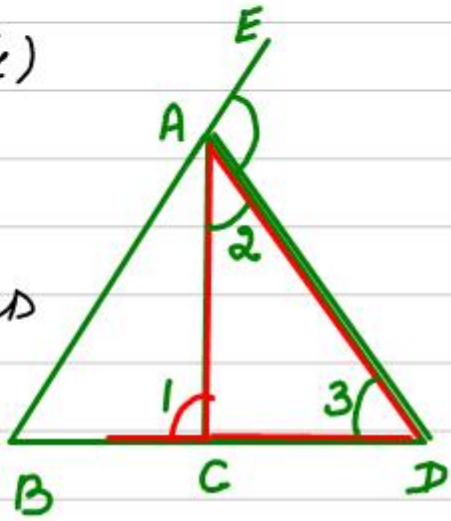
⑦ to find $\angle ACD$, $\angle ADC$, $\angle DAE$



Sol $\angle 1 + \angle ACD = 180^\circ$ (linear pair)

$100 + \angle ACD = 180^\circ$

$\Rightarrow \angle ACD = 180 - 100$

$= 80^\circ$

$\angle 1$ is exterior angle of $\triangle ACD$

$\angle 1 = \angle 2 + \angle 3$

$100 = 50 + \angle 3$

$\Rightarrow \angle 3 = 100 - 50$

$\Rightarrow \angle ADC = 50^\circ$

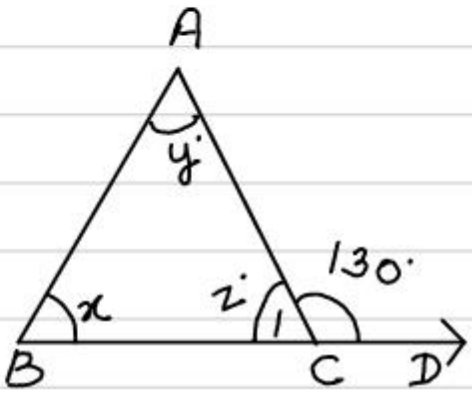
$\angle DAE$ is exterior of $\triangle ABD$

$\therefore \angle DAE = \angle B + \angle 3$

$= 40^\circ + 50$

$= 90^\circ$

⑧ to find $x^\circ, y^\circ, z^\circ$



Sol let $x^\circ = 2a^\circ$

$y^\circ = 3a^\circ$

$\angle ACD$ is exterior of $\triangle ABC$

$\therefore \angle ACD = \angle A + \angle B$

$130 = 2a + 3a$

$\Rightarrow 5a = 130$

$\Rightarrow a = \frac{130}{5} = 26$

$\angle 1 + \angle ACD = 180^\circ$ (linear pair)

$z + 130 = 180^\circ$

$\Rightarrow z = 180 - 130$

$= 50^\circ$

$x^\circ = 2 \times 26 = 52^\circ$ | $y^\circ = 3 \times 26 = 78^\circ$ | $z^\circ = 50^\circ$