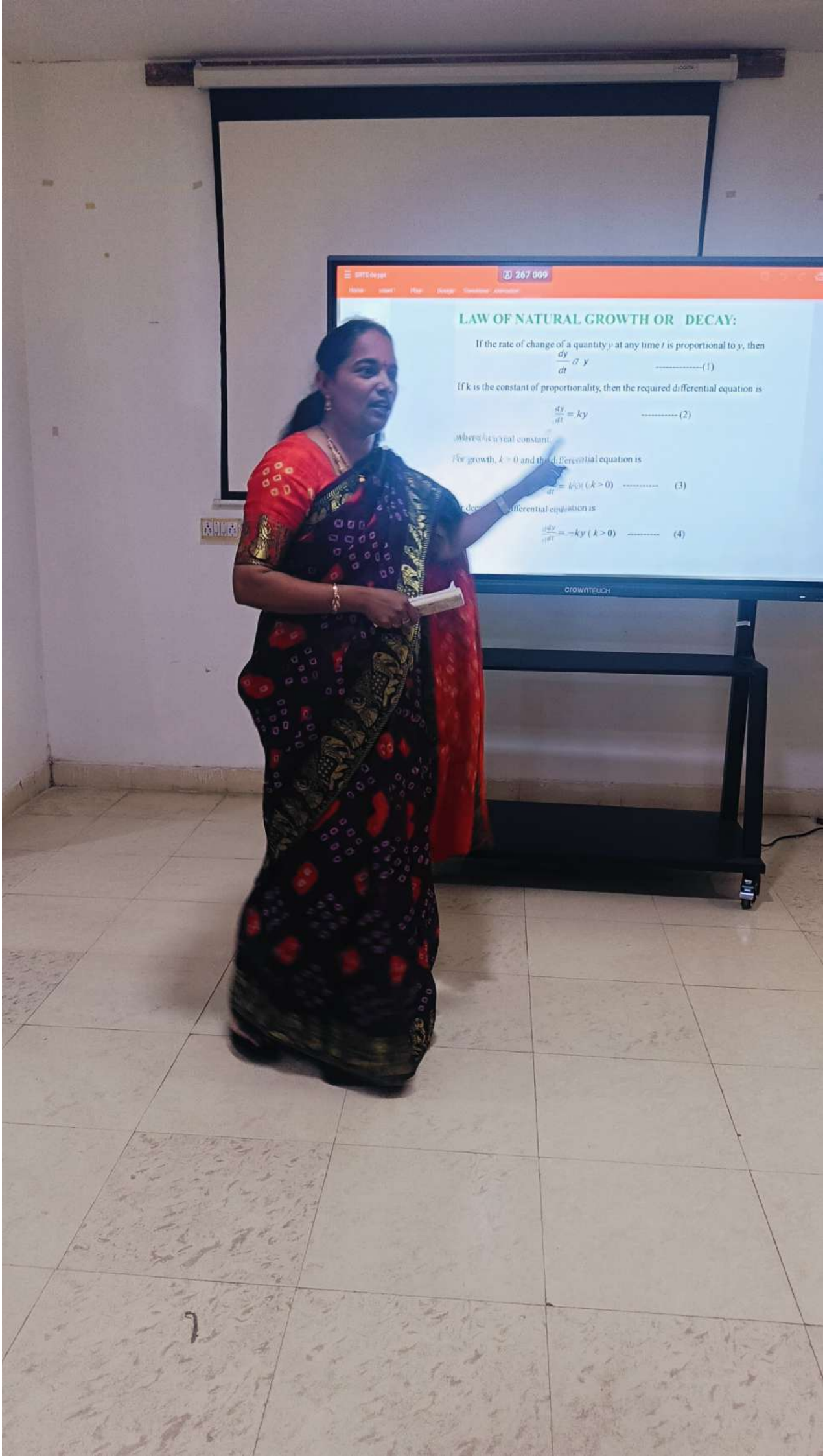
LAW OF NATURAL GROWTH OR DECAY:
If the rate of change of a quantity y at any time t is proportional to y, then
$\frac{dy}{dt} \propto y$ ----------(1)
If k is the constant of proportionality, then the required differential equation is
$\frac{dy}{dt} = ky$ ---------- (2)
where k is a real constant.
For growth, $k > 0$ and the differential equation is
$\frac{dy}{dt} = ky\ (k > 0)$ ---------- (3)
For decay, the differential equation is
$\frac{dy}{dt} = -ky\ (k > 0)$ ---------- (4)
crownTOUCH


Derivatives → rate of change
Differential Equations