'A Quadratic Emissions Model'

a) $42 = 27556A + 166B + C$ (1)
$14 = 11236A + 106B + C, 3 = 100A + 10B + C$ (1)

Solving simultaneous equations,
$A = \frac{13}{5760}, B = -\frac{53}{360}, C = \frac{1223}{288}$ (1)
Thus, $y = \frac{13}{5760}x^2 - \frac{53}{360}x + \frac{1223}{288}$ (1)

b) $\frac{dy}{dx} = \frac{13}{2880}x - \frac{53}{360}$ (1)
at minimum, $\frac{53}{360} = \frac{13}{2880}x, x = 32.6(3s.f.)$ (1)

The model is not suitable as it predicts minimum emissions at around 1883, which is clearly not true. (1)