

a). $x^2 - (\alpha + \beta)x + \alpha\beta = 0.$

$$\alpha\beta = \frac{c}{a}$$

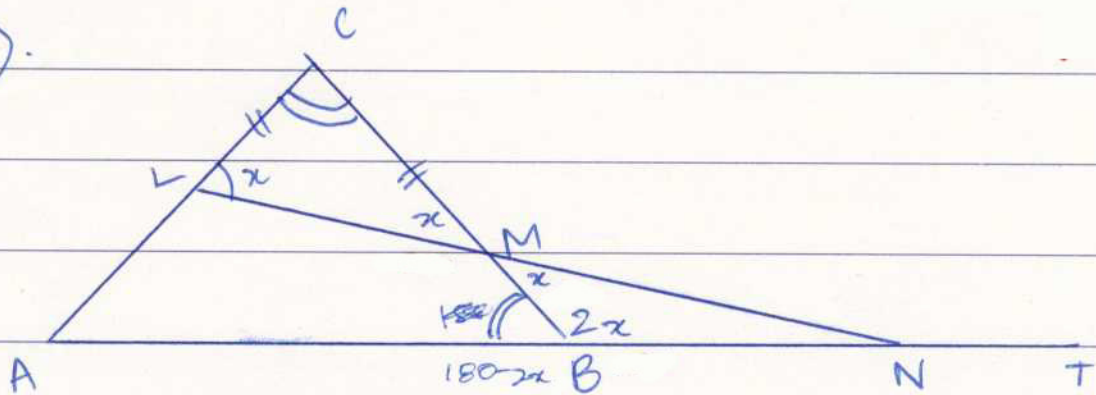
$$\alpha + \beta = b - a.$$

$$3x^2 + 2x + k = 0.$$

$$\alpha\beta = \frac{c}{a}$$

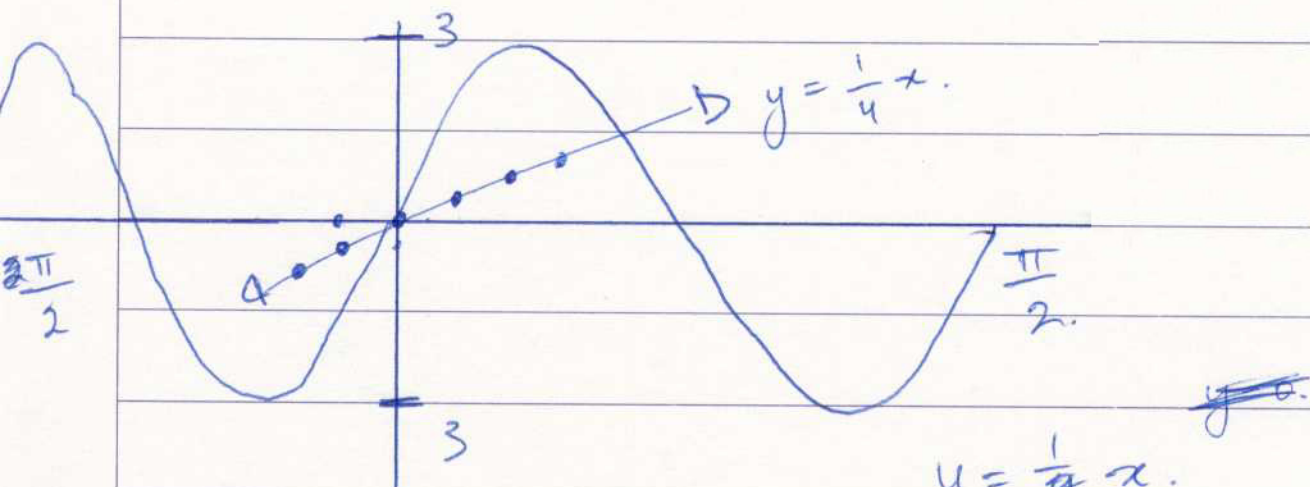
$$k = \frac{1}{3}$$

b).





Q. i). $y = 3 \sin 2x$



x	-1	0	1	2	3
y	-1/4	0	1/4	1/2	3/4

$$\int_0^{\frac{\pi}{4}} (3 \sin 2x - \frac{1}{4}x) dx$$

$$\left[\frac{3}{2} \cos 2x - \frac{1}{8}x \right]_0^{\frac{\pi}{4}}$$

$$\left(3 \cos 2 \times \frac{\pi}{4} - \frac{1}{8}x \right) - \left(3 \cos 2 \times 0 - \frac{1}{8}x \right)$$

$$\frac{3}{2} \cos 1 \cdot 32x - \frac{1}{8} \cos - \frac{1}{8}x$$

iii). $y = \frac{1}{4}x$
 $y' = \frac{1x}{8}$