

Ex 3.3

Q1 (ii)

Q2 (iii) and (i)

Q3 (i) Slope

(ii) $x < -2$ and $x > 3$

(iii) $-2 < x < 3$

(iv) $x = 2$ and $x = 3$

Q4 Pos slope for $x < -1$
Neg slope for $x > -1$
Turning pt at $x = -1$

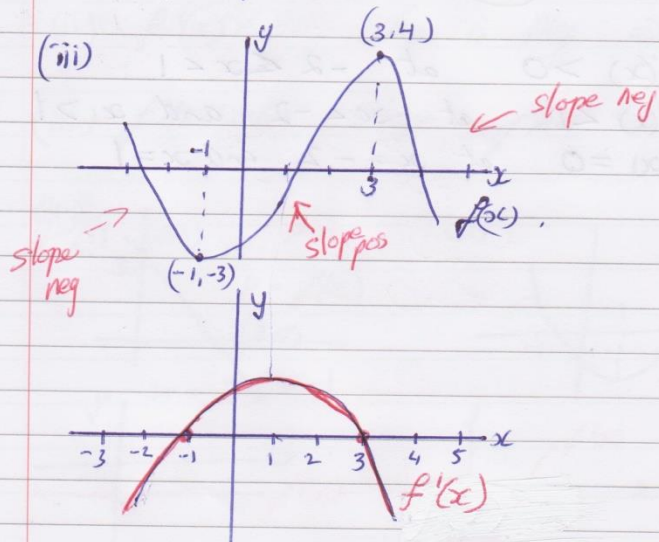
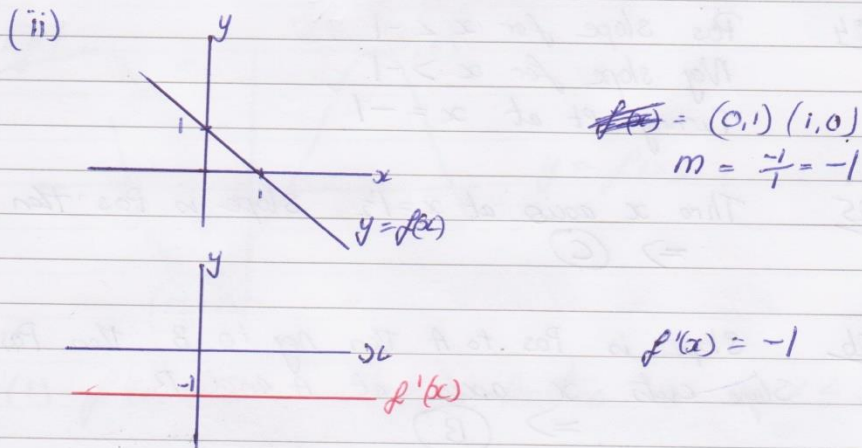
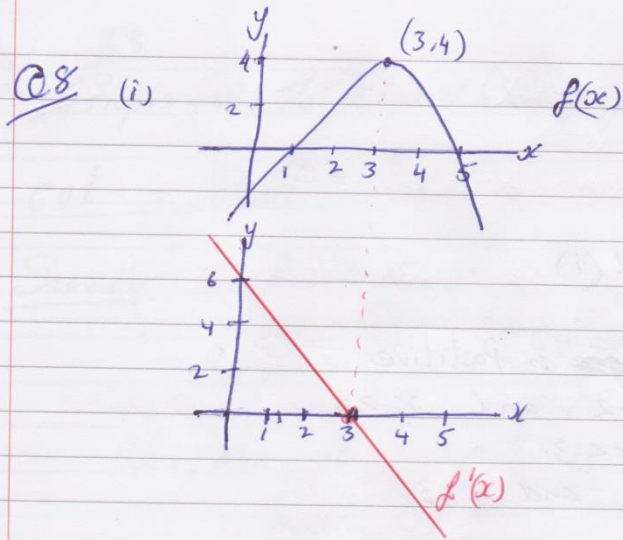
Q5 Thro x axis at $x = 1/2$ slope is Pos then Neg
 \Rightarrow (C)

Q6 Slope is Pos to A then Neg to B then Pos.
Slope cuts x axis at A and B
 \Rightarrow (B)

Q7 (i) $f'(x) > 0$ at $-2 < x < 1$

(ii) $f'(x) < 0$ at $x < -2$ and $x > 1$

(iii) $f'(x) = 0$ at $x = -2$ and $x = 1$



Q9 (i) for (a) turning Pt at $x = -3$

for (b) turnings Pt at $x = 4$

(ii) for (a) curve is decreasing for $x < -3$

for (b) curve is decreasing for $x > 4$

Q10 (i) (a) Stationary Pts at $x = -1$ and $x = 3$

(b) Stationary Pts at $x = -4.5$ and $x = 1$

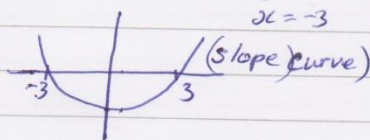
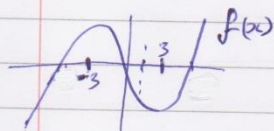
(ii) (a) curve is increasing from $x < -1$ and $x > 3$

(b) curve is increasing for $-4.5 < x < 1$

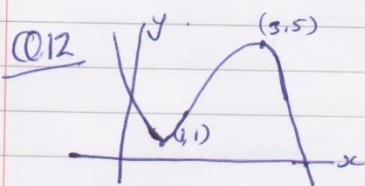
Q11 $f(x) = x^2 - 9$

$$(x+3)(x-3) = 0$$

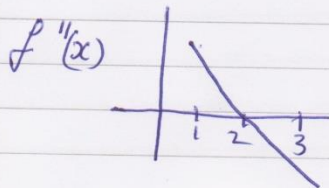
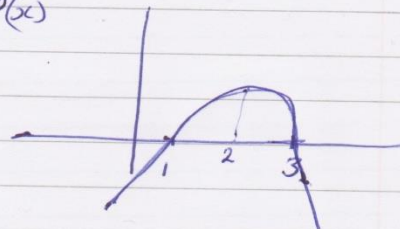
$$x = -3 \quad x = 3$$



(C) is true



(i) $f'(x)$



Q.13 (i) $f'(x) = k(x-a)(x-b)$
 $= k(x-2)(x-4)$
 $\Rightarrow a = -2$ and $b = -4$.

(ii) $f'(x)$ contains the point $(0, 6)$

$(0, 6)$ on $k(x-2)(x-4)$

$$6 = k(0-2)(0-4)$$

$$6 = 8k$$

$$\frac{6}{8} = k$$

$$\frac{3}{4} = k$$