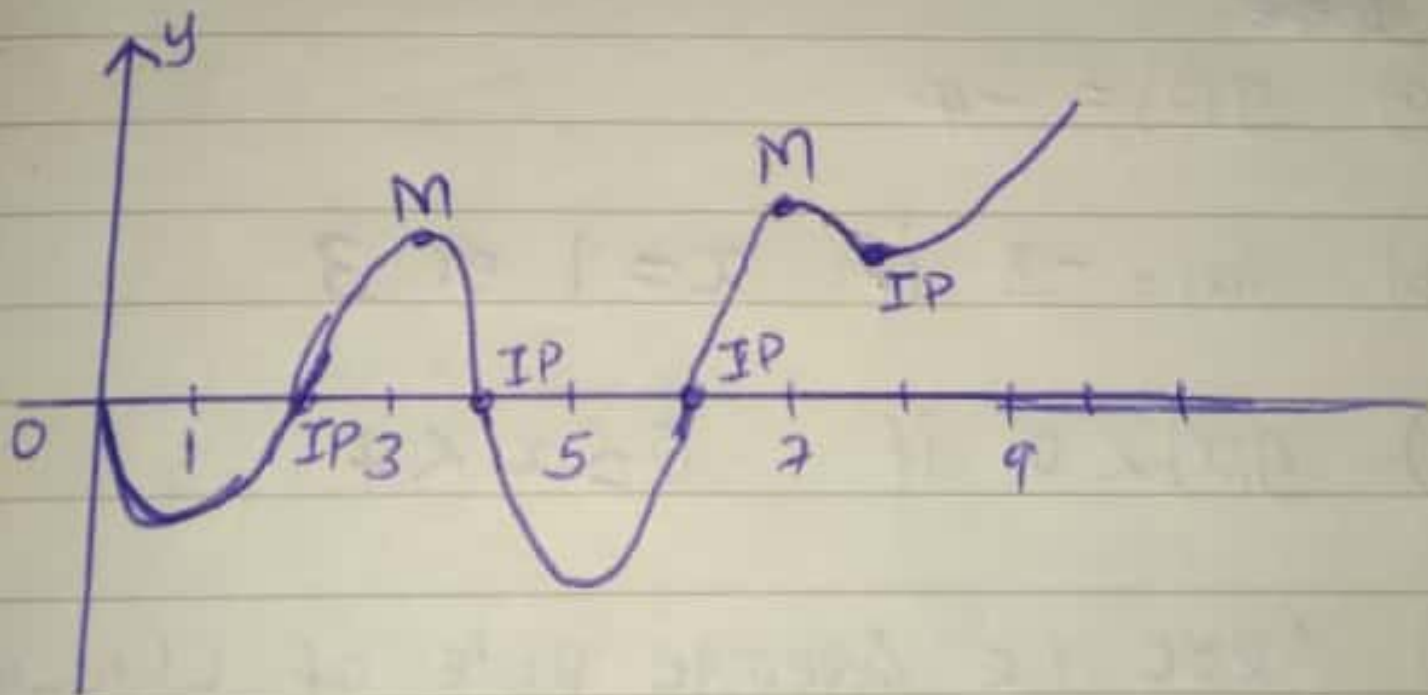


a) values of x h is increasing
 $(1, 3) \cup (5, 7) \cup (8, \infty)$

b) values of x h is concave down
 $(2, 4) \cup (6, 8)$

c) Local maxima (M)
at $x = 3$ Indicate M
at $x = 7$ Indicate M

d) Inflection points (IP)
at $x = 2, x = 4, x = 6, x = 8$





2. $g(x) = A \cdot f[B(x+c)] + D$

Shifted up 9 units $A =$

Shifted right 5 units

vertically compressed by a factor of 2

flipped over the y-axis

Horizontally compressed by a factor of 4

$$A = \frac{1}{2}$$

$$B = -4$$

$$C = 5$$

$$D = 9$$

3. (a) $g(2) = -4$

(b) $g(x) = -3$ if 1 or 2.5

(c) $g(x) < 0$ if $0 \leq x \leq 4$

(d) AROC of g on $[1, 3]$

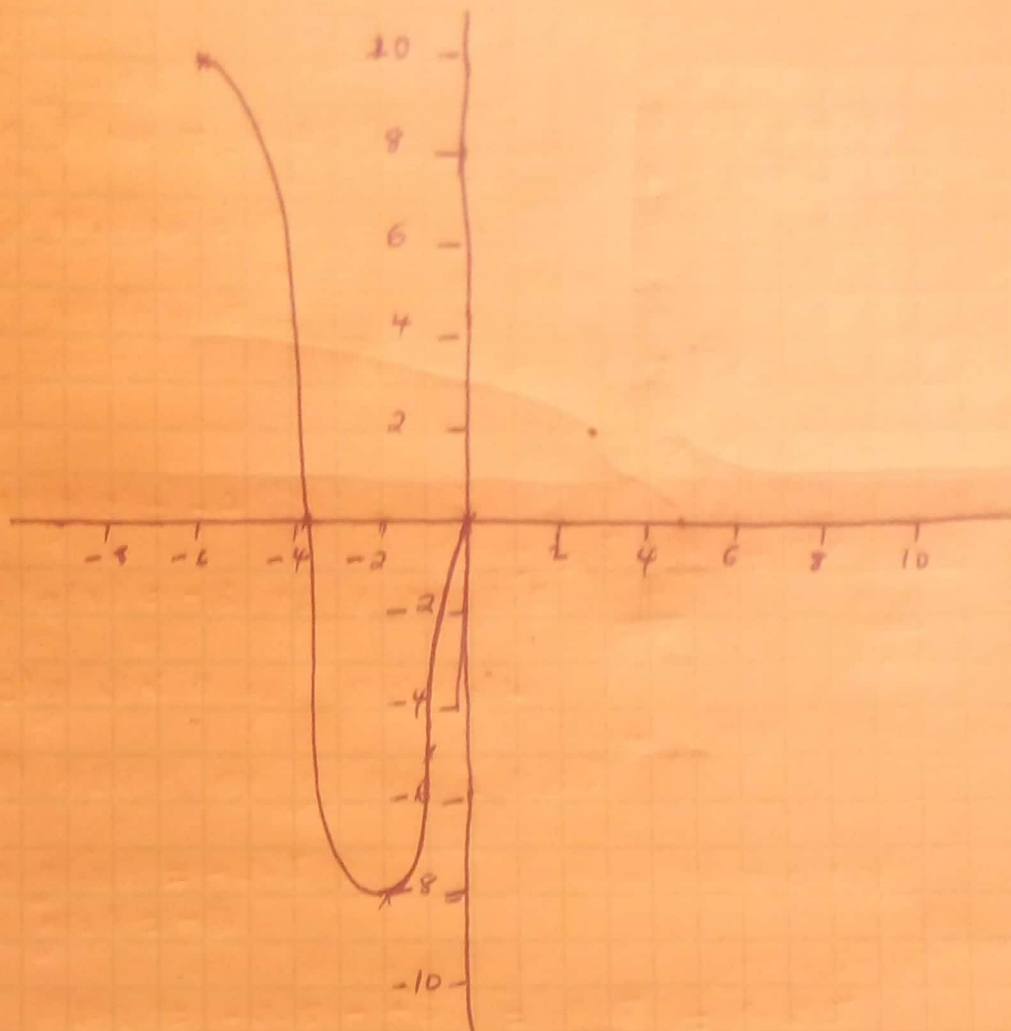
$$g(3) = -2.5$$

$$g(1) = -3$$

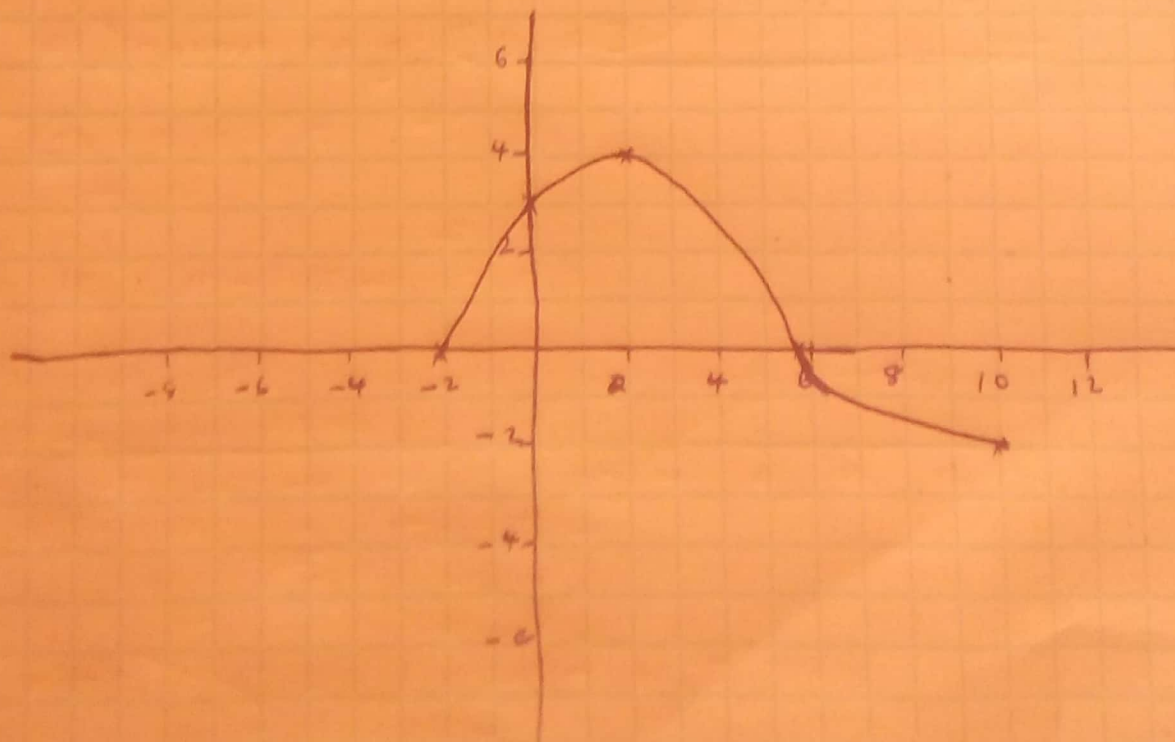
$$\text{AROC} = \frac{-2.5 - (-3)}{3 - 1} = \frac{0.5}{2} = 0.25$$

(e) Domain of g : $[0, 6]$

(f)



(g)



(h) shift right 3 units
Compress by a factor of 2 horizontally.
Shift downwards 2 units.

4

