

$$y' = 4x^3 - 24x^2 + 32x$$

$$\rightarrow y' = 0$$

$$4x^3 - 24x^2 + 32x = 0$$

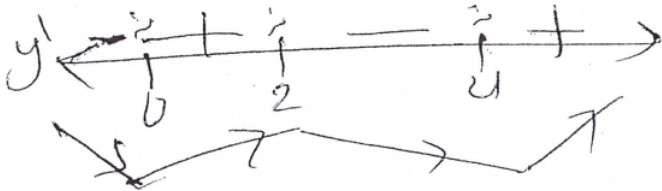
$$4x(x^2 - 6x + 8) = 0$$

$$\therefore 4x = 0 \rightarrow \boxed{x = 0}$$

$$\text{or } x^2 - 6x + 8 = 0$$

$$(x-4)(x-2) = 0 \rightarrow \boxed{x = 2, 4}$$

y' is undefined? No values.



\therefore relative max. $(2, f(2)) = (2, 16)$

relative min. $(4, f(4)) = (4, 0)$

$(0, f(0)) = (0, 0)$

~~2nd derivative test~~
 2nd derivative test, $\text{استخدم الطريقة الثانية}$

~~2.3~~ \rightarrow to find the inflection points =

$$f''(x) = 12x^2 - 48x + 32 = 0$$

$$\therefore f''(x) = 0$$

$$12x^2 - 48x + 32 = 0$$

$$a = 12, b = -48, c = 32$$

$$x = \frac{48 \pm \sqrt{(-48)^2 - 4(12)(32)}}{2(12)} = \frac{48 \pm 27.7}{24} = 3.15 // 0.845$$

10.8