

2.64
K.C.

(i) $y(0) = 0$ (0,0)
 $0 = |x^2 - 2x| + \frac{x^3}{2}$
 $0 < x < 2$

$x^2 - 2x > 0$
 $\frac{x(x-2)}{2}$

$x \geq 2, x \leq 0$
 $0 = x(x - 2 + \frac{x^2}{2})$

$0 = x(-x + 2 + \frac{x^2}{2})$
 $x = 0$

$x = 0$ $x = -1 \pm \sqrt{5}$
 $(-1 - \sqrt{5}, 0)$ \leftarrow $\frac{0}{\text{min}}$
 $\frac{0}{\text{max}}$

(2-3) $x \geq 2, x \leq 0$

$y = x^2 - 2x + \frac{x^3}{2}$

$\rightarrow y' = 2x - 2 + \frac{3x^2}{2}$

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

$x = -2, x = \frac{2}{3}$
 $\text{max}(-2, 12)$ \leftarrow $\frac{0}{\text{max}}$

-3	-2	-1	0	1	2
+	0	-	0	+	+
	\nearrow max				\nearrow

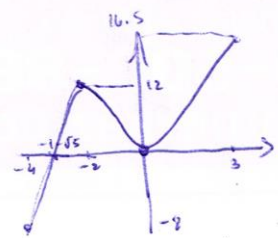
$0 < x < 2$
 $y = -x^2 + 2x + \frac{x^3}{3}$

$\rightarrow y' = -2x + 2 + \frac{3x^2}{2}$
 $3x^2 - 4x + 4 = 0$

0	1	2
0	+	0
	\nearrow	

min (0,0)

אם $x > 0$, $4x < -2$ $\frac{0}{\text{max}}$
 אם $x < 0$, $-2 < x < 0$ $\frac{0}{\text{max}}$



$3 > x > 0, 4x < -2$ $\frac{0}{\text{max}}$
 $-2 < x < 0$ $\frac{0}{\text{max}}$