5.4 NOTES

Solve using the interval notation.

$x^3 - 4x^2 \geq 0$ Above

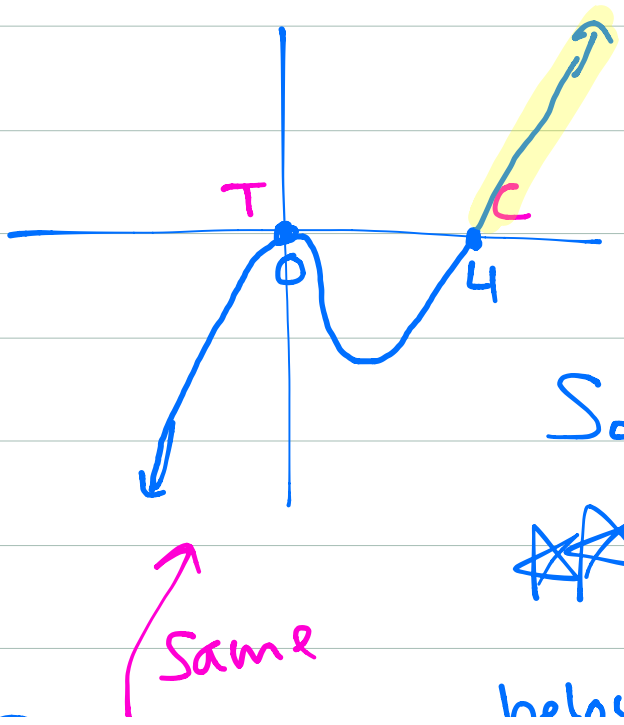
$x^2(x - 4) = 0$

$x^2 = 0$ → $x = 0$, M.2, T

$x - 4 = 0$ → $x = 4$, M.1, C

Power

x^3 → odd pos.



Same

Solution:

$(4, \infty)$

below

② $x^3 - 4x^2 \leq 0$

$(-\infty, 0) \cup (0, 4)$

③ $(x+2)(x^2 - x + 1) \leq 0$

below

$x = -2$

M.I

C

$(x-1)(x-1)$

power

3

odd

pos

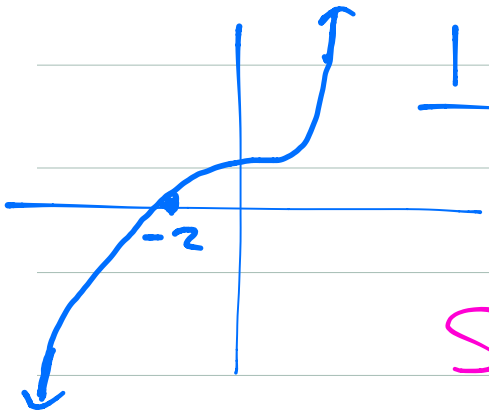
$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$a = 1$
$b = -1$
$c = 1$

$\frac{-(-1) \pm \sqrt{(-1)^2 - 4(1)(1)}}{2(1)}$

$\frac{1 \pm \sqrt{1-4}}{2}$

$\frac{1 \pm \sqrt{-3}}{2} = \frac{1 \pm \sqrt{3}\,i}{2}$



Solution: $(-\infty, -2)$