

$$4x^5 - 9x^3 + 8x^2 - 9x + 6$$

$$(x-1)^2(4x^3 + 8x^2 + 3x + 6)$$

$$\begin{array}{r} 1 \) \ 4 \ 0 \ -9 \ 8 \ -9 \ 6 \\ \underline{4 \ 4 \ -5 \ 3 \ -6} \\ 1 \) \ 4 \ 4 \ -5 \ 3 \ -6 \ 0 \\ \underline{4 \ 8 \ 3 \ 6} \\ 1 \) \ 4 \ 8 \ 3 \ 6 \ 0 \\ \underline{4 \ 12 \ 15} \end{array}$$

$$0x^4$$

$$x = \pm (1, 2, 3, 6, \frac{1}{2}, \frac{1}{4}, \frac{3}{2}, \frac{3}{4})$$

$$LCC = 4$$

$$\begin{array}{r} -2 \) \ 4 \ 8 \ 3 \ 6 \\ \underline{-8 \ 0 \ -6} \\ 4 \ 0 \ 3 \ 0 \end{array}$$

(6)

$$(x-1)^2(x+2)(4x^2+3)$$



(7)

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

$$4x^2 = -3$$

$$x^2 = -\frac{3}{4}$$

$$x = \pm \sqrt{-\frac{3}{4}} = \pm i \frac{\sqrt{3}}{2}$$

$$4(x-1)^2(x+2)(x - (i\frac{\sqrt{3}}{2}))(x - (-i\frac{\sqrt{3}}{2}))$$

$$(x-1)^2(x+2)(2x - i\sqrt{3})(2x + i\sqrt{3})$$

42 $f(x) = (x-3)^2(x+5)(x-7)(x+1) \leq 0$

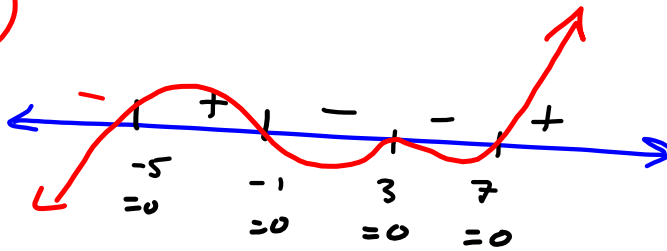
$(-\infty, -5] \cup [-1, 7]$

$\infty \left(\sqrt{\frac{(x-3)^2(x+5)}{(x-7)(x+1)}} \right)$

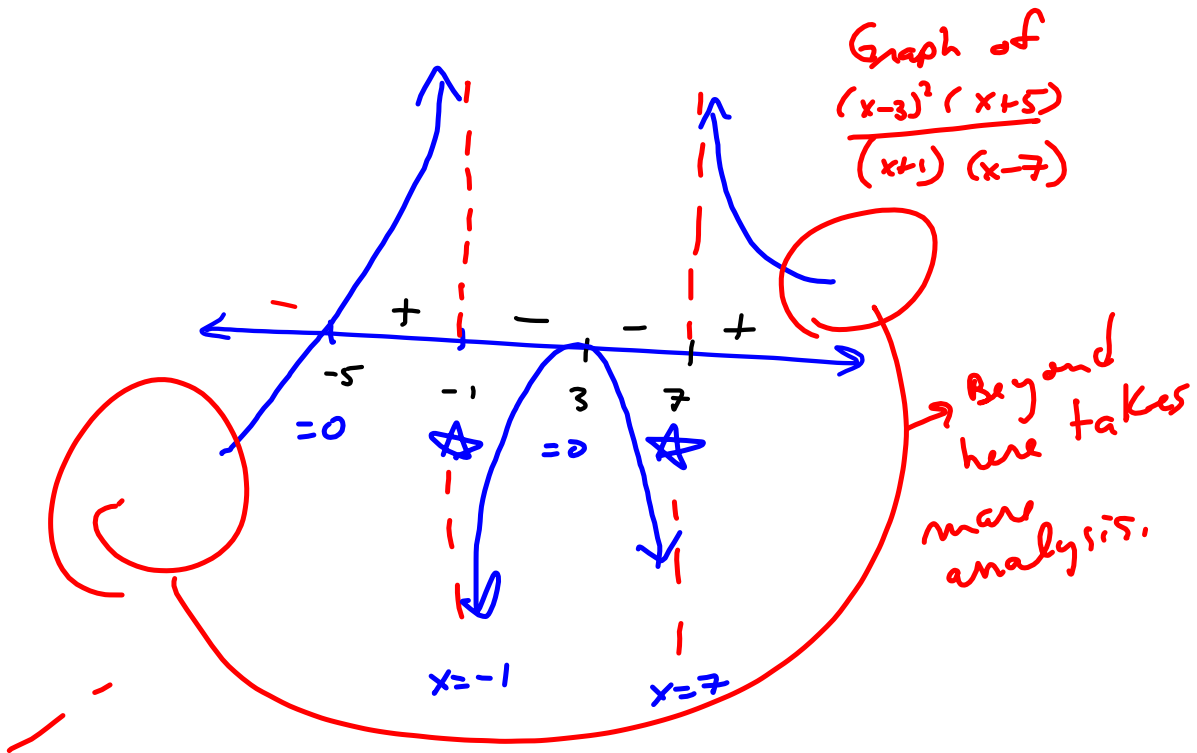
Need $\frac{(x-3)^2(x+5)}{(x-7)(x+1)} \geq 0$

$= [-5, -1) \cup \{3\} \cup (7, \infty)$

4b



Picture for #4c



$$f(x) = 4x^5 - 9x^3 + 8x^2 - 9x + 6$$

4, 2, OR 0 pos. roots (possible)

$$f(-x) = -4x^5 + 9x^3 + 8x^2 + 9x + 6$$

1 neg. root

$$4(-x)^5 - 9(-x)^3 + 8(-x)^2 - 9(-x) + 6$$

$$-4x^5 + 9x^3 + 8x^2 + 9x + 6$$