4) Solve the polynomial inequality using a sign chart.

$3x^3 - 4x^2 - 12x > -16$

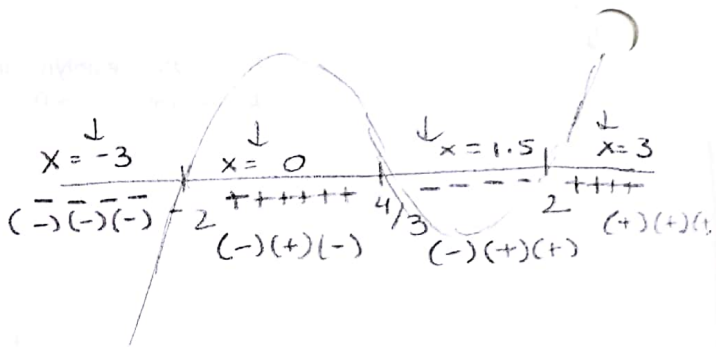
$3x^3 - 4x^2 - 12x + 16 > 0$

$x^2(3x-4) - 4(3x-4) > 0$

$(x^2-4)(3x-4) > 0$

$(x-2)(x+2)(3x-4) > 0$

$x = 2 \quad x = -2 \quad x = 4/3$



So $3x^3 - 4x^2 - 12x + 16 > 0$ for intervals

$(-2, 4/3) \cup (2, \infty)$

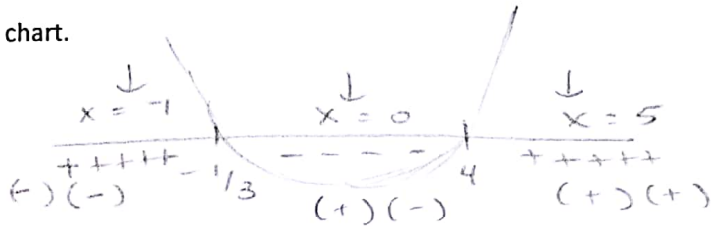
5) Solve the polynomial inequality using a sign chart.

$3x^2 - 11x > 4$

$3x^2 - 11x - 4 > 0$

$(3x+1)(x-4) > 0$

$x = -\frac{1}{3} \quad x = 4$



So $3x^2 - 11x - 4 > 0$ for intervals

$(-\infty, -\frac{1}{3}) \cup (4, \infty)$

6) Solve the polynomial inequality using a sign chart.

$(x+2)^2 \leq 25$

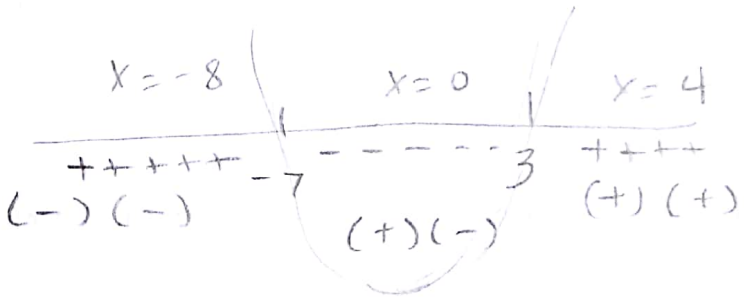
$x^2 + 4x + 4 \leq 0$

-25

$x^2 + 4x - 21 \leq 0$

$(x+7)(x-3) \leq 0$

$x = -7 \quad x = 3$



So $x^2 + 4x - 21 \leq 0$ for intervals

$[-7, 3]$