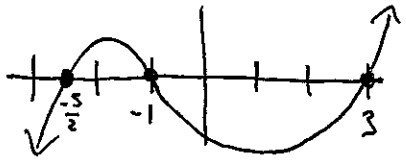
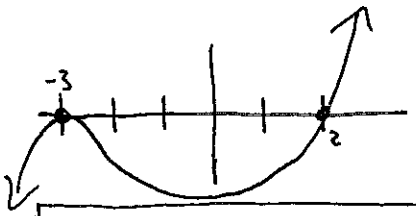
Polynomial Inequalities

1) $(x-3)(2x+5)(x+1) > 0$



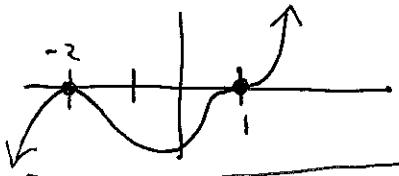
$x \in \left(-\frac{5}{2}, -1\right) \cup (3, \infty)$

2) $(x+3)^2(x-2) \geq 0$



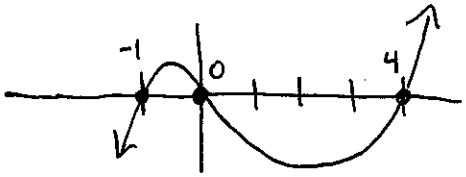
$x = -3$ or $x \in [2, \infty)$

3) $(x-1)^3(x+2)^2 < 0$



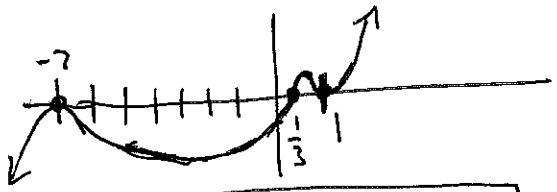
$x \in (-\infty, -2) \cup (-2, 1)$

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



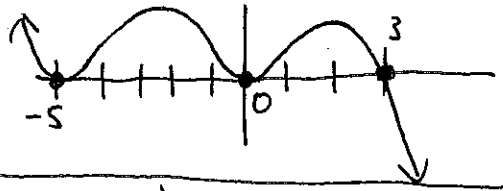
$x \in (-\infty, -1) \cup (0, 4)$

5) $(3x-1)(x+7)^2(x-1)^2 \geq 0$



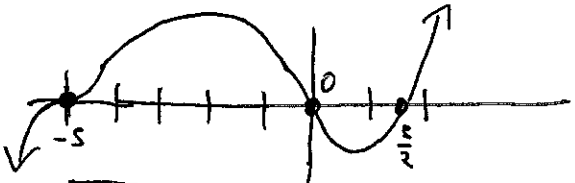
$x = -7$ or $x \in \left[\frac{1}{3}, \infty\right)$

6) $\frac{-1}{3}x^2(x-3)(x+5)^2 > 0$



$x \in (-\infty, -5) \cup (-5, 0) \cup (0, 3)$

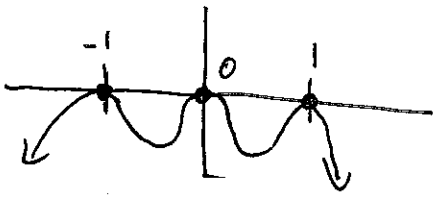
7) $x(2x-3)(x+5)^3 < 0$



$x \in \left(-\infty, -5\right) \cup \left(0, \frac{3}{2}\right)$

8) $-2x^4(x-1)^2(x^2+2x+1) \leq 0$

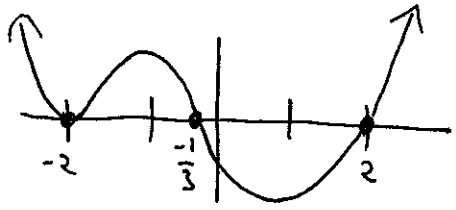
$-2x^4(x-1)^2(x+1)^2 \leq 0$



$x \in \mathbb{R}$ all Real numbers

9) $(x^2-4)(3x^2+7x+2)>0$

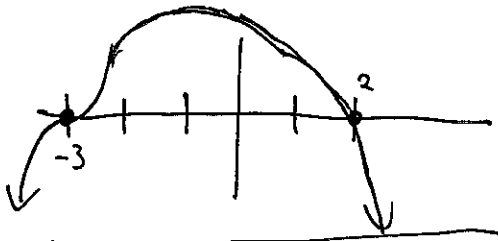
$(x+2)^2(x-2)(3x+1)>0$



$x \in (-\infty,-2) \cup (-2,\frac{-1}{3}) \cup (2,\infty)$

10) $(2-x)(x+3)^3 \leq 0$

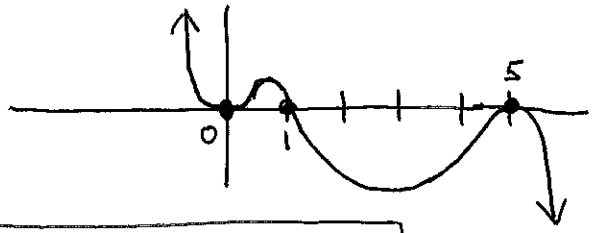
$-(x-2)(x+3)^3 \leq 0$



$x \in (-\infty,-3] \cup [2,\infty)$

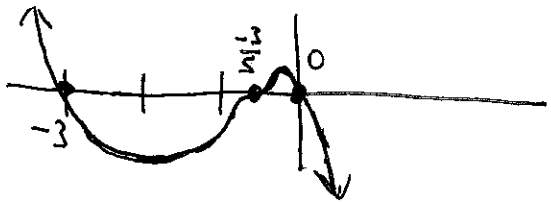
11) $x^4(5-x)^2(1-x)>0$

$-x^4(x-5)^2(x-1)>0$



$x \in (-\infty,0) \cup (0,1)$

12) $-x(x+3)(5x+3)^3>0$



$x \in (-\infty,-3) \cup (\frac{-3}{5},0)$