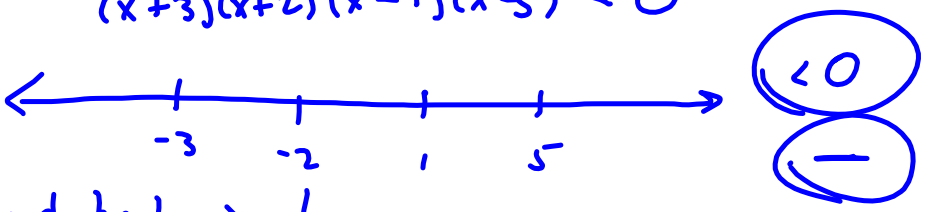
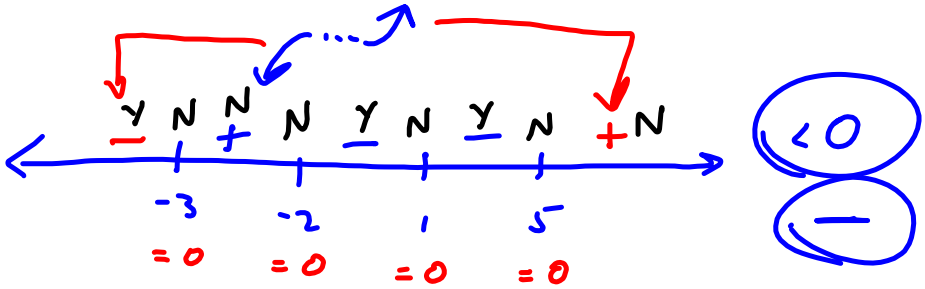
Solve $(x+3)(x+2)^3(x-1)^2(x-5) < 0$

Sign Pattern



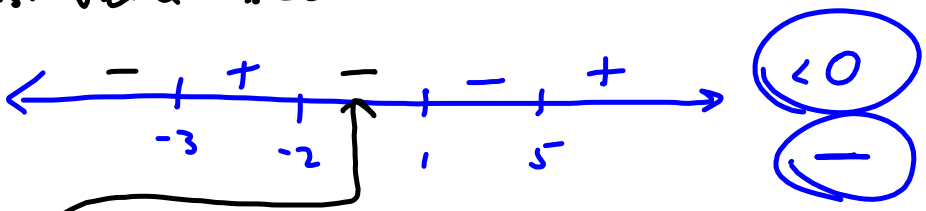
m1 Use end behavior!

$(x)(x)^3(x)^2(x) = x^7$



$(-\infty,-3) \cup (-2,1) \cup (1,5)$

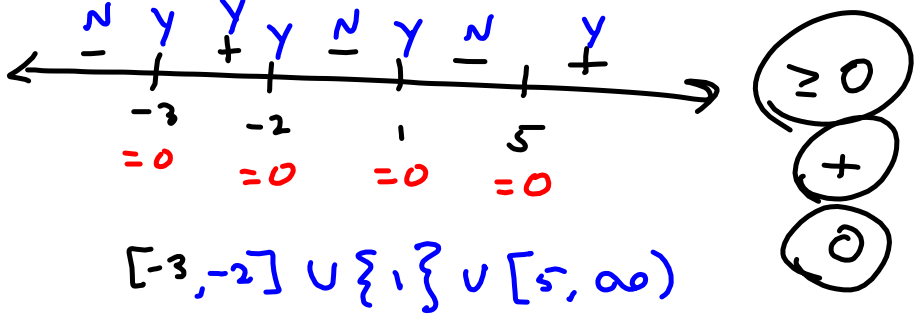
m2 Test value $x=0$



$(x+3)'(x+2)^3(x-1)^2(x-5)'$

$x=0$: $(3)(2)^3(-1)^2(-5) < 0$

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



$[-3,-2] \cup \{1\} \cup [5,\infty)$

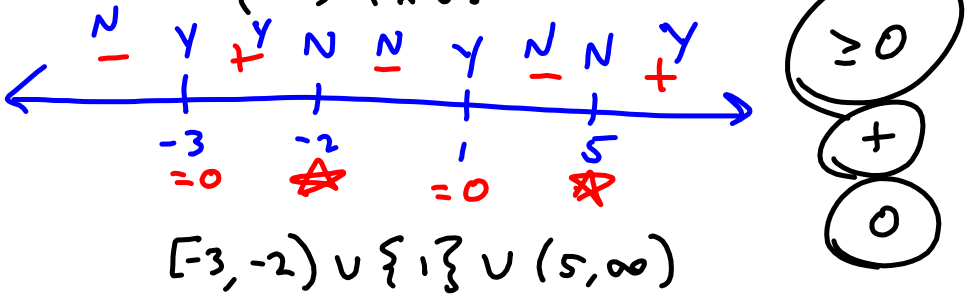
What's the domain of $\sqrt{(x+3)(x+2)^3(x-1)^2(x-5)}$

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

What's domain of

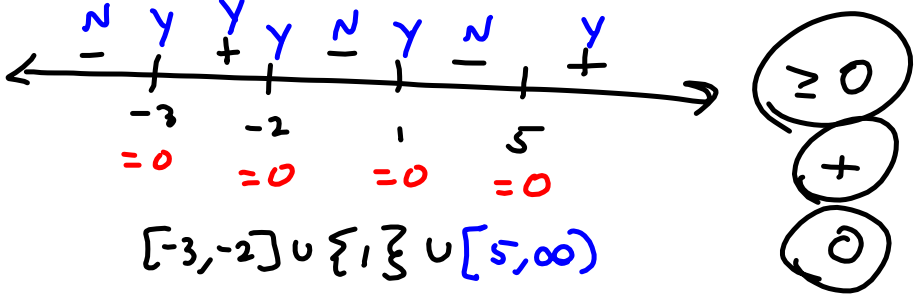
$$\sqrt{\frac{(x+3)(x-1)^2}{(x+2)^3(x-5)}}$$

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



$[-3,-2) \cup \{1\} \cup (5,\infty)$

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



$[-3,-2] \cup \{1\} \cup [5,\infty)$