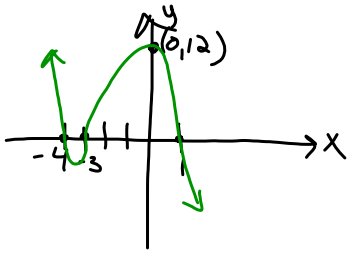
Section: 3.4; Equations & Graphs of Polynomials

1. Sketch $P(x) = -(x+3)(x-1)(x+4)$

negative cubic

roots: $-3, 1, -4$

y-intercept: $(0,12)$

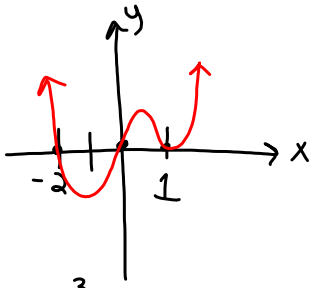


2) $P(x) = x(x-1)^2(x+2)$

Quartic (positive)

Roots: $-2, 0, 1$ (multiplicity of 2) double root

y-int: $(0,0)$

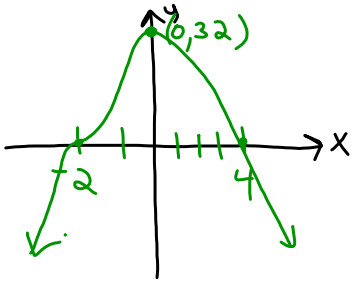


3) $P(x) = -(x+2)^3(x-4)$

Quartic (negative)

roots: $4, -2$ (multiplicity of 3) triple root

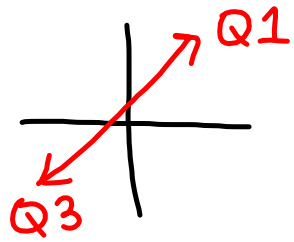
y-int: $(0, 32)$



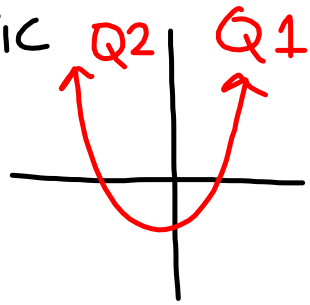
Summary of End Behaviour

Positive

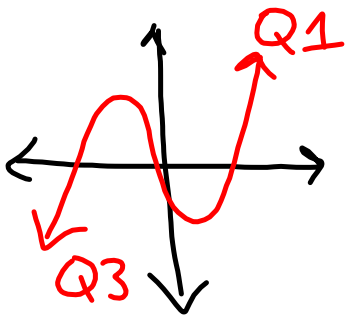
Linear



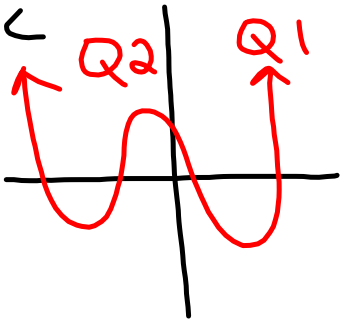
Quadratic



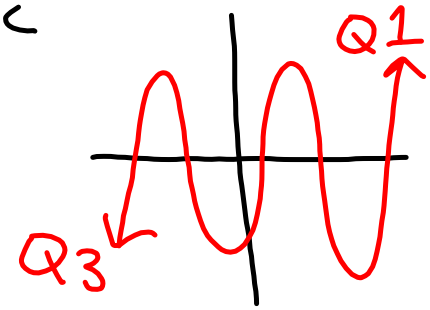
Cubic



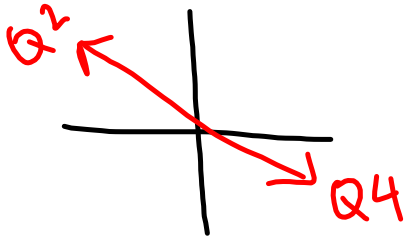
Quartic

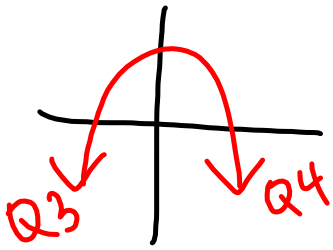


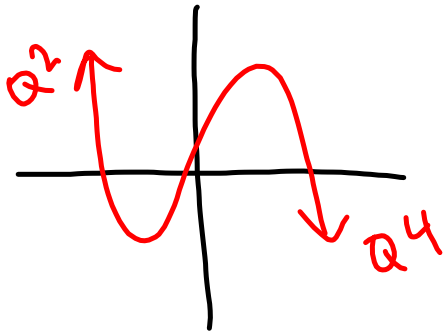
Quintic

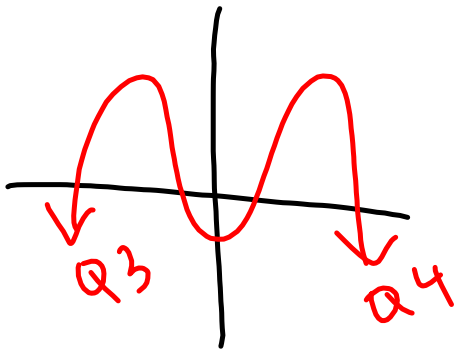


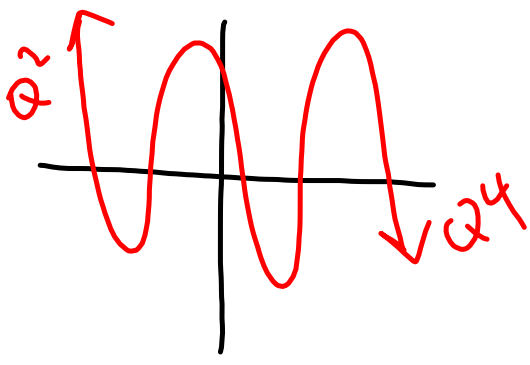
Negative











Practice Graphing, label all intercepts

1) $P(x) = -x^2(x+3)^2$

2) $P(x) = -(x-4)^3$

3) $P(x) = (x+1)^2(x-3)(x+4)(x-5)$