① $f(x) = -x^2(x+4)(x-2)$

power function: $-x^4$

degree: 4

Max # of turning points: 3

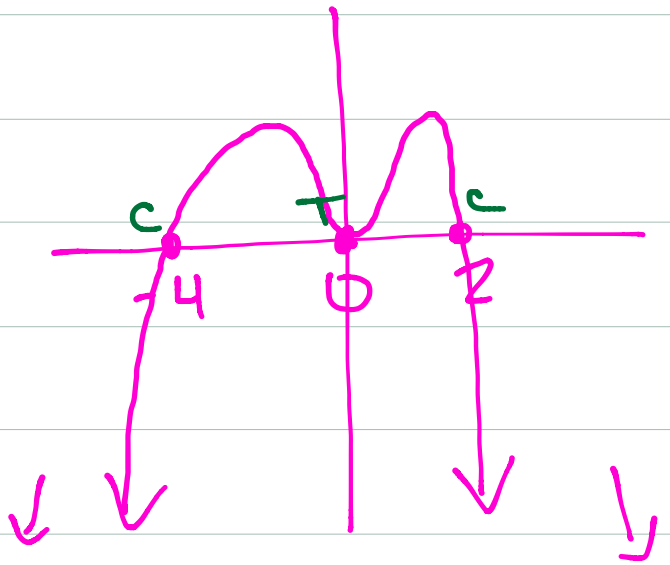
*End behavior: $\lim_{x\to\infty} f(x) = -\infty$ $\lim_{x\to-\infty} f(x) = -\infty$

*X-intercepts: $x=0$ $x=-4$ $x=2$

Multiplicity: M.2 M.1 M.1

Touch/Cross: T C C

Sketch.



② $f(x) = -4x^{2}(x+1)^{2}(x-5)^{1}$

power function: $-4x^{5}$

degree: 5

Max # of turning points: 4

* End behavior: $\lim_{x\to\infty} f(x) = \boxed{-\infty}$ $\lim_{x\to-\infty} f(x) = \boxed{\infty}$

* X-intercepts: $x=0$ $x=-1$ $x=5$

Multiplicity: M.2 M.2 M.1

Touch/Cross: T T C

Sketch.

③ $f(x) = 17(x^2-5)(x+4)^2$

power function: $17x^4$

degree: 4

Max # of turning points: 3

* End behavior: $\lim_{x\to\infty} f(x) = \boxed{\infty}$ $\lim_{x\to-\infty} f(x) = \boxed{\infty}$

* X-intercepts: $x=\sqrt{5}$ $x=-\sqrt{5}$ $x=-4$

Multiplicity: M.1 M.1 M.2

Touch/Cross: C C T

Sketch.