# 4.8 Graphing Polynomial Functions

Wednesday, June 19, 2019 1:31 PM

$f(x) = 2x^5 - 2x^4 - 44x^3 + 80x^2$

① Determine end behavior by applying the Leading Coefficient Test

degree = 5 (odd) L.C. = 2 (positive)

② Write linear factorization and identify all zeros/roots

GCF $2x^2(1x^3 - x^2 - 22x + 40)$

possible zeros: ~~1~~, ~~-1~~, 2, -2, 4, -4, 5, -5, 8, -8, 10, -10, 20, -20, 40, -40

| -1 | 1 | -1 | -22 | 40 |
|---|---|---|---|---|
| | | -1 | 2 | 20 |
| | 1 | -2 | -20 | 60 |

| 2 | 1 | -1 | -22 | 40 |
|---|---|---|---|---|
| | | 2 | 2 | -40 |
| | 1 | 1 | -20 | 0 |
| | | $x^2$ | x | C R |

$2x^2(x-2)(x^2 + x - 20)$

GCF RRT TRI

$f(x) = 2x^2(x-2)(x+5)(x-4)$

$x = 0, 0, 2, -5, 4$

mult. = twice once once once

Touch Cross Cross Cross