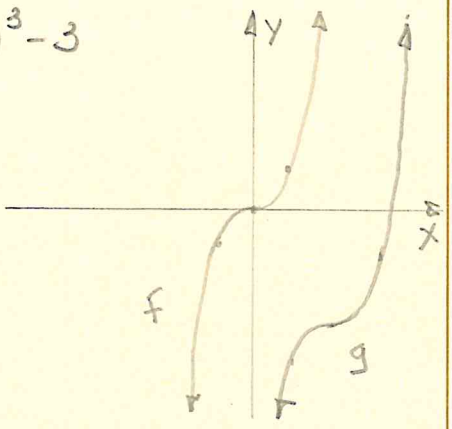
Pg. 109, #20 $f(x) = x^3$; $g(x) = (x-2)^3 - 3$



Transformation $f \to g$

① HS 2 →

② VS 3 ↓

Pg. 110, #31 $g(x) = 5 - \frac{1}{2}x - 3x^2$

Degree = 2 (even) ; Leading coefficient = $a_2 = -3$ (<0)

End Behavior: Falls Left, Falls Right

Pg. 110, #48 $y = x^5 - 5x^3 + 4x$

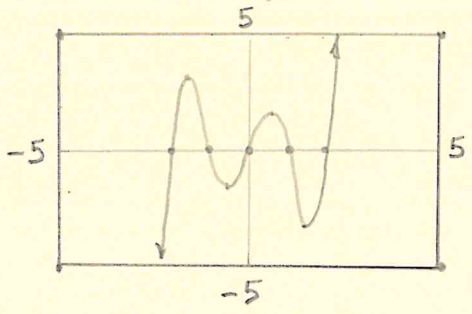
a) Solve: $0 = x^5 - 5x^3 + 4x$

$0 = x(x^4 - 5x^2 + 4)$

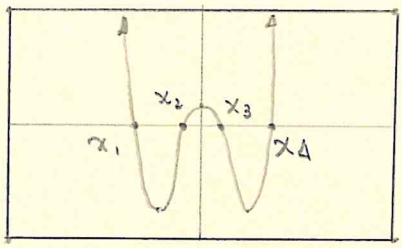
$0 = x(x^2 - 4)(x^2 - 1)$

So $x = 0, \pm 2, \pm 1$

b and c)



Pg 110, #59 $f(x) = 2x^4 - 6x^2 + 1$



Real Zeros:

$x_1 = -1.680$

$x_2 = -0.421$

$x_3 = 0.421$

$x_4 = 1.680$

R Min $= -3.5$ when $x = \pm 1.225$

R Max $= 1$ when $x = 0$