EX.0.1.2, Sauer

Rewrite the following polynomials in nested form and evaluate at $x = -1/2$.

a. $p(x) = 6x^3 - 2x^2 - 3x + 7$

b. $p(x) = 8x^5 - x^4 - 3x^3 + x^2 - 3x + 1$

c. $p(x) = 4x^6 - 2x^4 - 2x + 4$

a. $p(x) = 6x^3 - 2x^2 - 3x + 7$

$= (6x^2 - 2x - 3)x + 7$

$= ((6x - 2)x - 3)x + 7$ nested form

$p(-\frac{1}{2}) = 7.25$ with both formula

b. $p(x) = 8x^5 - x^4 - 3x^3 + x^2 - 3x + 1$

$= (8x^4 - x^3 - 3x^2 + x - 3)x + 1$

$= ((8x^3 - x^2 - 3x + 1)x - 3)x + 1$

$= (((8x^2 - x - 3)x + 1)x - 3)x + 1$

$= ((((8x - 1)x - 3)x + 1)x - 3)x + 1$ nested form

$p(-\frac{1}{2}) = 2.8125$ with both formula

C. $p(x) = 4x^6 - 2x^4 - 2x + 4$

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

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

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

$= ((((4x^2 - 2)x)x)x - 2)x + 4$ nested form

$p(-\frac{1}{2}) = 4.9375$ with both formula