

Mathematics 101 Worksheet 4.1-4.3

Problems

1) For the following, identify the degree and the leading coefficient.

a) $P(x) = 10x - 64x^4 - 5$

b) $P(x) = -9$

c) $P(x) = x^2 - \frac{2x^5}{3} + 2$

d) $P(x) = 7xy - 8x^2y^3 + 7x$

2) For the polynomial function defined by $g(x) = -x^3 - x + 1$, find the function values.

a) $g(0)$

b) $g(1)$

c) $g(-1)$

d) $g\left(\frac{-1}{2}\right)$

3) Perform the following operations.

a) $(-4a^3 + 8a^2 - 3a) + (-7a^3 + 3a^2 + 3a)$

b) $(-4a^3 + 8a^2 - 3a) - (-7a^3 + 3a + 5)$

c) $2x(x^2 - 7x - 4)$

d) $(x + 6)(x - 7)$

e) $(2x - 5)^2$

f) $(x - y)(x^2 + xy + y^2)$

g) $\left(\frac{2}{3}t + 4\right)\left(\frac{2}{3}t - 4\right)$

h) $(x^2 + 7x + 10) \div (x + 5)$

i) $(x^2 + 8x - 16) \div (x + 4)$

j) $(6x^3y + 12x^2y^2 - 9xy^3) \div (3xy)$