Answer on Question #54912 – Math – Algebra

Consider the polynomial given below.

p(t) = −t6(2 − 6t)(t2 + t + 4)

Find the degree.

Find the Leading Term.

Solution

Simplify the expression for *p(t):*

$$p(t) = -t^6(2 - 6t)(t^2 + t + 4) = -t^6(2t^2 + 2t + 8 - 6t^3 - 6t^2 - 24t) =$$

$$= -t^6(-6t^3 - 4t^2 - 22t + 8) = 6t^9 + 4t^8 + 22t^7 - 8t^6;$$

$$p(t) = 6t^9 + 4t^8 + 22t^7 - 8t^6;$$

To find the degree of the polynomial, we look at the value of the largest exponent. Thus, the degree of polynomial *p(t)* is 9.

The term which contains the highest power of *t* will be the leading term in a polynomial. For example, $6t^9$ is the leading term of the polynomial

$$p(t) = 6t^9 + 4t^8 + 22t^7 - 8t^6.$$

Answer: 9, $6t^9$.