



Division of Algebraic Expressions Ex 8.1 Q1

Answer :

(i) **Correction** : It is $2x^3 + 5x^2 - 7$ instead of $2x^2 + 5x^2 - 7$.

The degree of the polynomial $2x^3 + 5x^2 - 7$ is 3.

(ii) The degree of the polynomial $5x^2 - 35x + 2$ is 2.

(iii) The degree of the polynomial $2x + x^2 - 8$ is 2.

(iv) The degree of the polynomial $\frac{1}{2}y^7 - 12y^6 + 48y^5 - 10$ is 7.

(v) The degree of the polynomial $3x^3 + 1$ is 3.

(vi) 5 is a constant polynomial and its degree is 0.

(vii) The degree of the polynomial $20x^3 + 12x^2y^2 - 10y^2 + 20$ is 4.

Division of Algebraic Expressions Ex 8.1 Q2

Answer :

(i) $x^2 + 2x^{-2}$ is not a polynomial because -2 is the power of variable x is not a non negative integer.

(ii) $\sqrt{ax} + x^2 - x^3$ is not a polynomial because $\frac{1}{2}$ is the power of variable x is not a non negative integer.

(iii) $3y^3 - \sqrt{5}y + 9$ is a polynomial because the powers of variable y are non negative integers.

(iv) $ax^{\frac{1}{2}} + ax + 9x^2 + 4$ is not a polynomial because $\frac{1}{2}$ is the power of variable x is not a non negative integer.

(v) $3x^{-2} + 2x^{-1} + 4x + 5$ is not a polynomial because -2 and -1 are the powers of variable x are not non negative integers.

Division of Algebraic Expressions Ex 8.1 Q3

Answer :

(i) Standard form of the given polynomial can be expressed as :

$$(5x^4 + x^2 + 6x + 3) \text{ or } (3 + 6x + x^2 + 5x^4)$$

The degree of the polynomial is 4.

(ii) Standard form of the given polynomial can be expressed as :

$$(5a^6 + a^2 + 4) \text{ or } (4 + a^2 + 5a^6)$$

The degree of the polynomial is 6.

$$(iii) (x^3 - 1)(x^3 - 4) = x^6 - 5x^3 + 4$$

Standard form of the given polynomial can be expressed as :

$$(x^6 - 5x^3 + 4) \text{ or } (4 - 5x^3 + x^6)$$

The degree of the polynomial is 6.

$$(iv) (y^3 - 2)(y^3 + 11) = y^6 + 9y^3 - 22$$

Standard form of the given polynomial can be expressed as :

$$(y^6 + 9y^3 - 22) \text{ or } (-22 + 9y^3 + y^6)$$

The degree of the polynomial is 6.

$$(v) \left(a^3 - \frac{3}{8}\right)\left(a^3 + \frac{16}{17}\right) = a^6 + \frac{77}{136}a^3 - \frac{6}{17}$$

Standard form of the given polynomial can be expressed as :

$$\left(a^6 + \frac{77}{136}a^3 - \frac{6}{17}\right) \text{ or } \left(-\frac{6}{17} + \frac{77}{136}a^3 + a^6\right)$$

The degree of the polynomial is 6.

$$(vi) \left(a + \frac{3}{4}\right)\left(a + \frac{4}{3}\right) = a^2 + \frac{25}{12}a + 1$$

Standard form of the given polynomial can be expressed as :

$$(a^2 + \frac{25}{12}a + 1) \text{ or } (1 + \frac{25}{12}a + a^2)$$

The degree of the polynomial is 2.

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