STD – 9 MATHS

CHAPTER - 2

polynomials

**EXERCISE** - 2.1 Q:1

- 1. Which of the following expressions are polynomials in one variable and which are not? State reasons for your answer.
- (i)  $4x^2 3x + 7$
- $\triangleright$  The equation  $4x^2 3x + 7$  can be written as  $4x^2 3x^1 + 7x^0$
- ➤ Since x is the only variable in the given equation and the powers of x (i.e., 2, 1 and 0) are whole numbers, we can say that the expression 4x² 3x + 7 is a polynomial in one variable.

(ii) 
$$y^2 + \sqrt{2}$$

- > The equation  $y^2 + \sqrt{2}$  can be written as  $y^2 + \sqrt{2} y^0$
- Since y is the only variable in the given equation and the powers of y (i.e., 2 and 0) are whole numbers, we can say that the expression  $y^2 + \sqrt{2}$  is a polynomial in one variable.

(iii) 
$$3\sqrt{t} + t\sqrt{2}$$

- > The equation  $3\sqrt{t} + t\sqrt{2}$  can be written as  $3t^{\frac{1}{2}} + \sqrt{2}t$
- Though, t is the only variable in the given equation, the powers of t (i.e.,  $\frac{1}{2}$ ) is not a whole number.
- ➤ Hence, we can say that the expression  $3\sqrt{t} + t\sqrt{2}$  is not a polynomial in one variable.

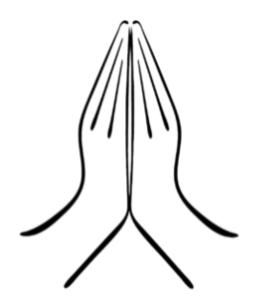
(iv) Y + 
$$\frac{2}{y}$$

- > The equation Y +  $\frac{2}{y}$  an be written as y +  $2y^{-1}$
- ➤ Though, y is the only variable in the given equation, the powers of y (i.e.,-1) is not a whole number.
- > Hence, we can say that the expression  $Y + \frac{2}{y}$  is not a polynomial in one variable.

(v) 
$$x^{10} + y^3 + t^{50}$$

- $\triangleright$  Here, in the equation  $x^{10} + y^3 + t^{50}$
- > Though, the powers, 10, 3, 50, are whole numbers, there are 3 variables used in the expression  $x^{10} + y^3 + t^{50}$ .
- > Hence, it is not a polynomial in one variable.

## Thanks



## For watching