



### MATHS

## **BOOKS - MBD NCERT SOLUTIONS**

# POLYNOMIALS

**Multiple Choice Questions** 

**1.** Which one is polynomial ?

A. 
$$rac{1}{x+1}$$

B. 
$$\sqrt{x}+2$$
  
C.  $\displaystyle rac{1}{x^2+2x+7}$   
D.  $x^3+1$ 

### Answer: D

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### 2. Which one is polynomial?

A. 
$$\frac{1}{x+1}$$
  
B.  $x^{\frac{1}{3}} + 2$ 

$$\mathsf{C}.\,\frac{1}{x^2+1}$$

D. 
$$x + \sqrt{2}$$
.

### Answer: D



### 3. Which one is polynomial?

A. 
$$\sqrt{x}+1$$

B. 
$$rac{x}{x^3+1}$$
  
C.  $rac{1}{x^2+1}$ 

### $\mathsf{D.}\,x^3+1$

### Answer: D

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### **4.** Which one is polynomial?

A. 
$$1 + \sqrt{x}$$

$$\mathsf{B.}\,x^2+1$$

C. 
$$\displaystyle rac{1}{x^3+x^2+1}$$
  
D.  $\displaystyle rac{1}{x^3}.$ 

### Answer: B



**5.** Find the zeros of polynomial  $6x^2 - 3 - 7x$ and verify the relationship between the zeros and their coefficients:

A. 
$$\frac{-1}{3}, \frac{3}{2}$$
  
B.  $\frac{-7}{3}, \frac{-3}{6}$   
C.  $\frac{7}{6}, \frac{-3}{6}$ 

D. None of these.

### Answer: A



**6.** Find the zeros of the following quadratic polynomials and verify the relationship between the zeros and the coefficients:

$$4x^2 - 4x + 1$$

A. 
$$\frac{1}{2}, \frac{1}{2}$$
  
B.  $\frac{-1}{2}, \frac{-1}{2}$   
C. 1,  $\frac{1}{4}$ 

# $\mathsf{D}.\,\frac{-1}{4},1$

### Answer: A

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7. The zeroes of  $3x^2 - 4 - x$  are :

A. 1, 
$$\frac{-4}{3}$$
  
B. -1,  $\frac{4}{3}$   
C. -1,  $\frac{-4}{3}$   
D. 1,  $\frac{4}{3}$ .

### Answer: B



**8.** The zeroes of  $3x^2 + 1 - 4x$  are :

A. 1, 
$$\frac{1}{3}$$
  
B. 1,  $\frac{-1}{3}$   
C. -1,  $\frac{1}{3}$   
D. -1,  $\frac{-1}{3}$ 

Answer: A



9. The polynomial  $p(x) = ax^2 + bx + c$  can

have at most zeros, where  $a \neq 0$ :

A. One

B. Two

C. Three

D. None of these.

### Answer: B





# 10. The sum of the zeroes of the polynomial $2x^2 - 8x + 6$ is

A. 3

- B. 4
- C. 4
- $\mathsf{D.}-3.$

### Answer: C



**11.** Which of the following expression is a quadratic polynomial?

A. 
$$2x + 3$$
  
B.  $3x^2 - 5x + 4$   
C.  $\frac{1}{2x^2 + 3x + 5}$ 

D. None of these.

### **Answer: B**



**12.** The zeroes of the polynomial  $x^2 - 7$  are :

A.  $\sqrt{7}, \sqrt{7}$ 

B. 7, -7

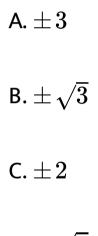
C.  $\sqrt{7}, -\sqrt{7}$ 

D. None of these.

Answer: C



13. Find the zeros of the polynomial  $f(x) = x^2 - 2$  and verify the relationship between its zeros and coefficients.



# D. $\pm \sqrt{2}$

### **Answer: B**



14. If the sum and product of zeroes of the polynomial are 7 and -5 respectively, the quadratic polynomial is :

A. 
$$x^2 - 7x - 5$$
  
B.  $x^2 + 7x - 5$ 

C. 
$$x^2 - 7x + 5$$

D. 
$$x^2 + 7x + 5$$
.

### **Answer: A**

15. Which of the following expression is not a

polynomial?

A. 
$$\displaystyle rac{1}{x+1}$$
  
B.  $\displaystyle x^2+1$   
C.  $\displaystyle 4m^2+9m+1$   
D.  $\displaystyle 5y^2-6.$ 

### Answer: A

16. How many (i) maximum (ii) minimum number of zeroes can a quadratic polynomial have ?
A.1

B. 2

C. 3

D. 4

### Answer: B



17. If  $\alpha$  and  $\beta$  are the zeros of the quadratic polynomial  $p(t) = t^2 - 5t - 1$ , find the value of  $\frac{\alpha^2}{\beta^2} + \frac{\beta^2}{\alpha^2} + 2\left(\frac{\alpha}{\beta} + \frac{\beta}{\alpha}\right) - \alpha\beta$ .

A. 1

B. 5

C.-5

D. -1

### **Answer: A**

**18.** The sum of zeroes of quadratic polynomial is  $-\sqrt{2}$  and product is 7, that quadratic polynomial is :

A. 
$$x^2-\sqrt{2}x+7$$
  
B.  $x^2+\sqrt{2}x+7$   
C.  $x^2-\sqrt{2}x-7$   
D.  $x^2+\sqrt{2}x-7$ 

#### **Answer: B**

**1.** Find the sum of zeroes of quadratic polynomial  $x^2 + 7x + 10$ .

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2. Find the product of zeroes of quadratic polynomial  $x^2 + 7x + 10$ .

**3.** Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients. (i)  $x^2 - 2x - 8$ .

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4. Find the product of zeroes of the quadratic

polynomial  $x^2 - 2x - 8$ .

1. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients  $x^2 - 2x - 8$ 

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**2.** Find the zeroes of the polynomial:

$$6x^2-7x-3$$

3. Find a quadratic polynomial with numbers

 $rac{1}{4}$  and -1 as the sum and product of its

zeroes respectively.

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# **4.** Find a quadratic polynomial with the given number as the sum and product of its zeroes respectively are $\frac{1}{4}$ and 4.



**5.** Find a quadratic polynomial with the given number as the sum and product of its zeroes respectively are 3 and 2.

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**6.** Find a quadratic polynomial with the given number as the sum and product of its zeroes respectively are 5 and 3.

7. Find a quadratic polynomial whose zeroes

are -4 and 2 respectively.

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8. Find a quadratic polynomial whose zeroes

are -3 and 5.

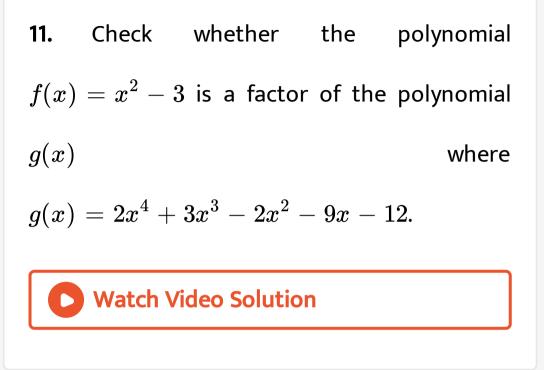
9. Find a quadratic polynomial whose zeroes

are 4 and -1.

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10. Find a quadratic polynomial whose zeroes

are 3 and -2.



12. Apply the division algorithm to find the quotient and remainder on dividing  $f(x)=x^3-3x^2+5x-3$  by  $g(x)=x^2-2$ 

13. Apply the division algorithm to find the quotient and remainder on dividing 
$$f(x) = x^4 - 3x^2 + 4x + 5$$
 by  $g(x) = x^2 + 1 - x$ 

14. Divide the polynomial  $p(x) = x^4 - 3x^2 + 4x + 5$  by the polynomial  $g(x) = x^2 - x + 1$  and find quotient and remainder.

# 15. Find all the zeros of the polynomial $f(x)=2x^4-3x^3-3x^2+6x-2$ , if two of its zeros are $\sqrt{2}$ and $-\sqrt{2}$ .

