

# WANDOOR GANITHAM – S.S.L.C STUDY MATERIAL 2021

## FOCUS AREA - QUESTION BANK - POLYNOMIALS

1	<p><b>If</b> <math>p(x)=x^2-3x+2</math></p> <p><b>a) Find</b> <math>p(1)</math> ?</p> <p><b>b) Check whether</b> <math>x-2</math> <b>is a factor of</b> <math>p(x)</math> <b>or not ?</b></p> <p><b>c) Write</b> <math>p(x)</math> <b>as the product of two first degree polynomials ?</b></p>
2	<p><b>If</b> <math>p(x)=x^2-2x-3</math></p> <p><b>a) Find</b> <math>p(3)</math> ?</p> <p><b>b) Check whether</b> <math>x+1</math> <b>is a factor of</b> <math>p(x)</math> <b>or not ?</b></p> <p><b>c) Write</b> <math>p(x)</math> <b>as the product of two first degree polynomials ?</b></p>
3	<p><b>If</b> <math>p(x)=x^2+5x+6</math></p> <p><b>a) Find</b> <math>p(-2)</math> ?</p> <p><b>b) Check whether</b> <math>x+3</math> <b>is a factor of</b> <math>p(x)</math> <b>or not ?</b></p> <p><b>c) Write</b> <math>p(x)</math> <b>as the product of two first degree polynomials ?</b></p>
4	<p><math>p(x)</math> <b>is a second degree polynomial and</b> <math>p(1)=0, p(5)=0</math> .</p> <p><b>a) Write a factor of</b> <math>p(x)</math> ?</p> <p><b>b) Write</b> <math>p(x)</math> <b>as the product of two first degree polynomials ?</b></p>
5	<p><math>p(x)</math> <b>is a second degree polynomial and</b> <math>p(2)=0, p(-3)=0</math> .</p> <p><b>a) Write a factor of</b> <math>p(x)</math> ?</p> <p><b>b) Write</b> <math>p(x)</math> <b>as the product of two first degree polynomials ?</b></p>
6	<p><math>p(x)</math> <b>is a second degree polynomial and</b> <math>p(-4)=0, p(-5)=0</math></p> <p><b>a) Write a factor of</b> <math>p(x)</math> ?</p> <p><b>b) Write</b> <math>p(x)</math> <b>as the product of two first degree polynomials ?</b></p>
7	<p><b>If</b> <math>p(x)=x^2-kx+8</math></p> <p><b>a) Find</b> <math>p(2)</math> ?</p>

**b) What is the value of  $k$  if  $x-2$  is a factor of  $p(x)$  ?**

**c) Write  $p(x)$  as the product of two first degree polynomials if one of its factor is  $x-2$  ?**

**8** **If  $p(x)=x^2+kx-15$**

**a) Find  $p(3)$  ?**

**b) What is the value of  $k$  if  $x-3$  is a factor of  $p(x)$  ?**

**c) Write  $p(x)$  as the product of two first degree polynomials if one of its factor is  $x-3$  ?**

**9** **If  $p(x)=x^2+4x+k$**

**a) Find  $p(-1)$  ?**

**b) What is the value of  $k$  if  $x+1$  is a factor of  $p(x)$  ?**

**c) Write  $p(x)$  as the product of two first degree polynomials if one of its factor is  $x+1$  ?**

**10** **If  $p(x)=kx^2-7x+3$**

**a) Find  $p(3)$  ?**

**b) What is the value of  $k$  if  $x-3$  is a factor of  $p(x)$  ?**

**c) Write  $p(x)$  as the product of two first degree polynomials if one of its factor is  $x-3$  ?**

**11** **If  $p(x)=3x^2+kx-2$**

**a) Find  $p(2)$  ?**

**b) What is the value of  $k$  if  $x-2$  is a factor of  $p(x)$  ?**

**c) Write  $p(x)$  as the product of two first degree polynomials if one of its factor is  $x-2$  ?**

12	<p>If <math>p(x) = x^2 - 9x + 6</math></p> <p>a) Find <math>p(1)</math> ?</p> <p>b) Find the number to be added to <math>p(x)</math> to get a polynomial for which <math>x - 1</math> is a factor ?</p>
13	<p>If <math>p(x) = x^2 - 7x + 13</math></p> <p>a) Find <math>p(2)</math> ?</p> <p>b) Find the number to be subtracted to <math>p(x)</math> to get a polynomial for which <math>x - 2</math> is a factor ?</p>
14	<p>If <math>p(x) = x^2 - 8x</math></p> <p>a) Find <math>p(3)</math> ?</p> <p>b) Find the number to be added to <math>p(x)</math> to get a polynomial for which <math>x - 3</math> is a factor ?</p>
15	<p>If <math>p(x) = 5x^2 + 3x</math></p> <p>a) Find <math>p(2)</math> ?</p> <p>b) Find the number to be subtracted to <math>p(x)</math> to get a polynomial for which <math>x - 2</math> is a factor ?</p>
16	<p>If <math>p(x) = x^2 - 6x + 5</math></p> <p>a) Find <math>p(1)</math> ?</p> <p>b) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
17	<p>If <math>p(x) = x^2 + 3x - 18</math></p> <p>a) Find <math>p(3)</math> ?</p> <p>b) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
18	<p>If <math>p(x) = 2x^2 - 5x + 3</math></p> <p>a) Find <math>p(1)</math> ?</p> <p>b) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>

19	<p>If <math>p(x)=3x^2-2x-8</math></p> <p>a) Find <math>p(2)</math> ?</p> <p>b) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
20	<p>The solution of the equation <math>p(x)=0</math> are 2 and 3 .</p> <p>a) Write one factor of <math>p(x)</math> ?</p> <p>b) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
21	<p>The solution of the equation <math>p(x)=0</math> are 5 and -4 .</p> <p>a) Write one factor of <math>p(x)</math> ?</p> <p>b) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
22	<p>The solution of the equation <math>p(x)=0</math> are -3 and -7 .</p> <p>a) Write one factor of <math>p(x)</math> ?</p> <p>b) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
23	<p>If <math>p(x)=x^2-6x+8</math></p> <p>a) Find <math>p(1)</math> ?</p> <p>b) What are the solutions of the equation <math>p(x)=0</math> ?</p> <p>c) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
24	<p>If <math>p(x)=x^2+3x-18</math></p> <p>a) Find <math>p(2)</math> ?</p> <p>b) What are the solutions of the equation <math>p(x)=0</math> ?</p> <p>c) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
25	<p>If <math>p(x)=2x^2+5x+2</math></p> <p>a) Find <math>p(1)</math> ?</p> <p>b) What are the solutions of the equation <math>p(x)=0</math> ?</p> <p>c) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>

26	<p>If <math>p(x)=(x-4)(x-6)</math></p> <p>a) Find <math>p(4)</math> ?</p> <p>b) Find the number added to <math>p(x)</math> to get a perfect square ?</p>
27	<p>If <math>p(x)=(x+1)(x-7)</math></p> <p>a) Find <math>p(7)</math> ?</p> <p>b) Find the number added to <math>p(x)</math> to get a perfect square ?</p>
28	<p>If <math>p(x)=x^2-9</math></p> <p>a) Find <math>p(3)</math> ?</p> <p>b) Write <math>p(x)</math> as the product of two first degree polynomials ?</p> <p>c) If the solutions of a second degree equation <math>f(x)=0</math> are additive inverses to each other ,what is the coefficient of <math>x</math> in <math>f(x)</math> ?</p>
29	<p><math>p(x)=(x-1)(x-6)-4</math></p> <p>a) Find <math>p(5)</math> ?</p> <p>b) Check whether <math>x-2</math> is a factor of <math>p(x)</math> or not ?</p> <p>c) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
30	<p><math>p(x)=(x-3)(x+2)-6</math></p> <p>a) Find <math>p(4)</math> ?</p> <p>b) Check whether <math>x+3</math> is a factor of <math>p(x)</math> or not ?</p> <p>c) Write <math>p(x)</math> as the product of two first degree polynomials ?</p>
31	<p><math>p(x)=x^{100}-1</math></p> <p>a) Find <math>p(1)</math> ?</p> <p>b) Check whether <math>x+1</math> is a factor of <math>p(x)</math> or not ?</p>
32	<p><math>p(x)=x^{25}+1</math></p> <p>a) Find <math>p(1)</math> ?</p> <p>b) Check whether <math>x+1</math> is a factor of <math>p(x)</math> or not ?</p>

33 If  $p(x) = x^2 + 7x + 12$

a) Find  $p(1)$  ?

b) Write a factor of  $p(x) - p(1)$  ?

34 If  $p(x) = 4x^2 + 9x + 2$

a) Find  $p(2)$  ?

b) Write a factor of  $p(x) - p(2)$  ?

35 If  $p(x) = x^2 - 6x + 10$

a) Find  $p(2)$  ?

b) Write a factor of  $p(x) - p(2)$  ?

c) Write  $p(x) - p(2)$  as the product of first degree polynomials ?

36 If  $p(x) = x^2 - 7x + 12$

a) Find  $p(3)$  ?

b) Write a factor of  $p(x) - p(3)$  ?

c) Write  $p(x) - p(3)$  as the product of first degree polynomials ?

37 If  $p(x) = x^2 - 11x + 40$

a) Find  $p(5)$  ?

b) Write a factor of  $p(x) - p(5)$  ?

c) Write as  $p(x) - p(5)$  the product of first degree polynomials ?

38 Write the following second degree polynomials as the product of first degree polynomials

a)  $x^2 + 4x + 3$

b)  $x^2 + 14x + 48$

c)  $x^2 + 6x - 16$

d)  $x^2 - 8x + 12$

e)  $x^2 - 10x + 24$

f)  $x^2 - 12x - 45$

## EXTRA QUESTIONS

39  $x-2$  and  $x-3$  are the factors of  $p(x)=x^2+mx+n$

a) Which among the following is equal to  $p(2)$  ?

( 2 , 3 , 1 , 0 )

b) Prove that  $3m+n=-9$  ?

c) What are the values of  $m$  and  $n$  ?

40 If  $p(x)=lx^2+mx+n$

a) If  $p(1)$  ?

b) If  $x+1$  is a factor of  $p(x)$  , prove that  $m=l+n$  ?

c) Write second degree polynomial whose factor is  $x+1$  ?

41 If  $x$  is a natural number

a) What number is to be added to  $x^2+10x$  to get a perfect square ?

b) If  $x^2+mx+36$  is a perfect square ,which number is 'm' ?

c) If  $x^2+mx+n$  is a perfect square , prove that  $m^2=4n$  ?

d) Write a second degree polynomial which is a perfect square and having a factor  $x+2$  ?

42 If  $x$  is a natural number

a) What number is to be added to  $x^2-8x$  to get a perfect square ?

b) If  $x^2-mx+36$  is a perfect square ,which number is 'm' ?

c) If  $x^2-mx+n$  is a perfect square , prove that  $m^2=4n$  ?

d) Write a second degree polynomial which is a perfect square and having a factor  $x-3$  ?

43 If  $p(x) = x^2 + x + 1$

a) Find  $p(1)$  ?

b) What are the solutions of the equation  $p(x) = 0$  ?

c) Can  $p(x)$  be written as the product of two first degree polynomials ?

44 If  $p(x) = x^2 + 4x + k$

a) If  $k = 4$ , find  $p(1)$  ?

b) Check whether the equation  $p(x) = 0$  has solutions or not if  $k = 5$  ?

c) In  $p(x)$ , up to what number can we take as  $k$ , so that  $p(x)$  can be factorised as product of two first degree polynomials ?

45 If  $p(x) = x^2 + kx + 9$

a) If  $k = 6$ , find  $p(3)$  ?

b) Check whether the equation  $p(x) = 0$  has solutions or not if  $k = 5$  ?

c) What is the least value of  $k$  in  $p(x)$ , so that  $p(x)$  can be factorised as product of two first degree polynomials ?