POLYNOMIAL FORMATIVE ASSIGNMENTS

Match the column

Degree of polynomial	Polynomial
1	$x^5 -3x^2 +1$
2	x-1
3	$x^4-3x^2+2+ 3x^3$
4	$x^2 -2x-1$
5	$1-3x^3$

Match the column

type of polynomial	Polynomial
monomial	$X^3 -4x^2 +1$
binomial	x-1
trinomial	$x^4-3x^2+2+ 3x^3$
No appropriate match	$x^2 -2$
	$3x^3$

Table Type

$P(x)=5x^3 -3x^2+7x+2$

P(0)	P(1)	P(5)	P(-1)	P(-2)

Multiple choice Questions

1) Find the remainder when $x^4+x^3-2x^2+x+1$ is divided by x-1

   a)1

   b)5

   c)2

   d)3

Solution (c)

2) Which of these identities is not true?

   a) $(x+y)^2 = x^2 + 2xy + y^2$

   b) $(x-y)^2 = x^2 - 2xy + y^2$

   c) $x^2 - y^2 = (x+y)(x-y)$

   d) $(x+y+z)^2 = x^2 + y^2 + z^2 + 3xyz$

Solution (d)

True or False statement

1) P(x) =x-1 and $g(x) =x^2-2x +1$. p(x) is a factor of g(x)
2) The factor of $3x^2$ –x-4 are (x+1)(3x-4)
3) Every linear polynomial has only one zero
4) Every real number is the zero's of zero polynomial
5) A binomial may have degree 6

6) 1,2 are the zeroes of x^2-3x+2
7) The degree of zero polynomial is not defined
8) Graph of polynomial (x^2-1) meets the x-axis at one point
9) Graph of constant polynomial never meets x axis

Solution

1) True, as g(1)=0
2) True, we can get this by split method
3) True
4) True
5) True , example x^6+1
6) True
7) True
8) False as it meets at two points
9) True

Factorize following

a) $x^2+9x+18$
b) $3x^3-x^2-3x+1$
c) $x^3-23x^2+142x-120$
d) $1+8x^3$

Solution

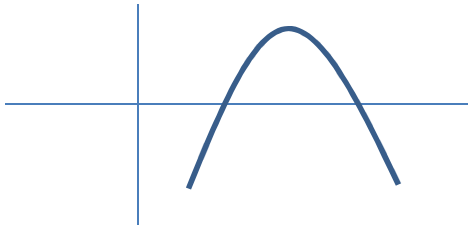
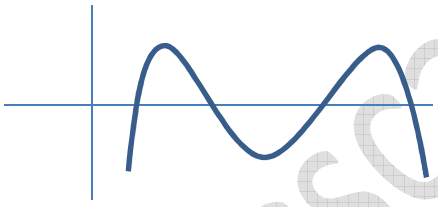
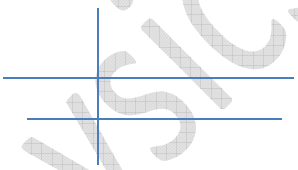
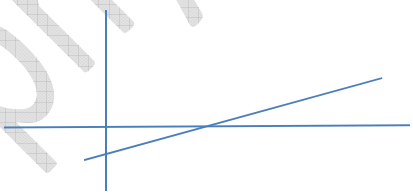
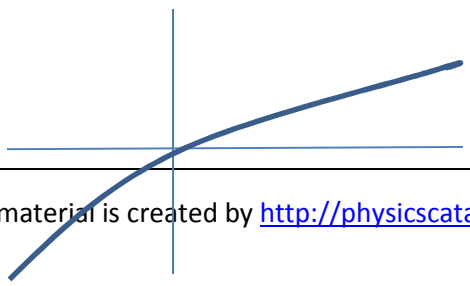
a) $(x+6)(x+3)$

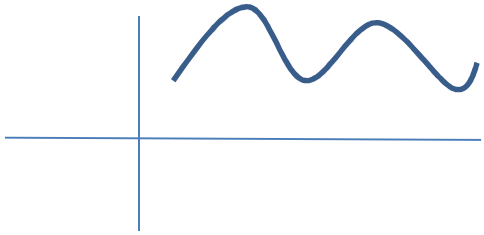
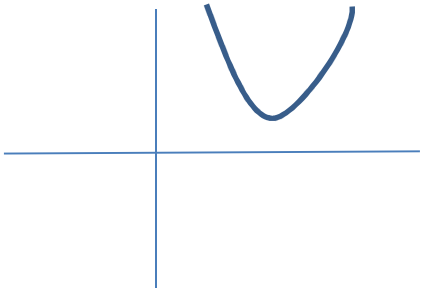
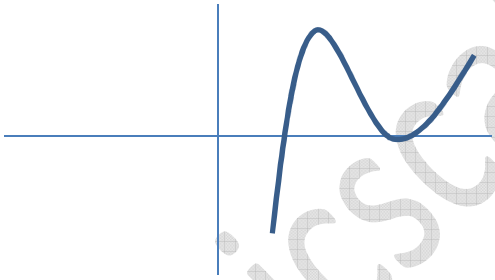
b) $)(3x-1)(x-1)(x+1)$

c)$(x-1)(x-10)(x-12)$

d) $(2x+1)(4x^2-2x+1)$

Match the column

Graph of polynomial	Number of Zeros
	0
	1
	2
	3
	4

	5
	6
	7

Solution

a) it cuts the x-axis at two points ,so 2 zeroes

b) it cuts the x-axis at four points ,so 4 zeroes

c) Since it does not cut the axis, so 0 zeroes

d) it cuts the x-axis at 1 points ,so 1 zero's

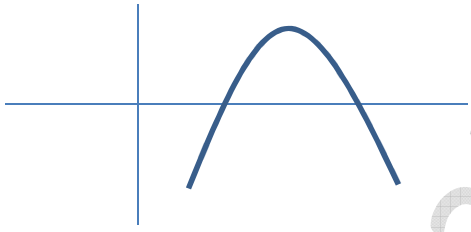
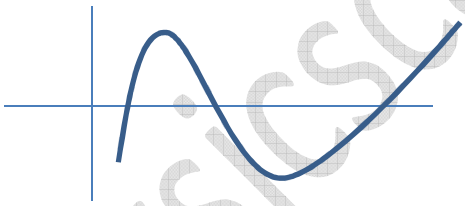
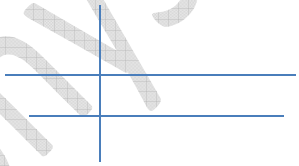
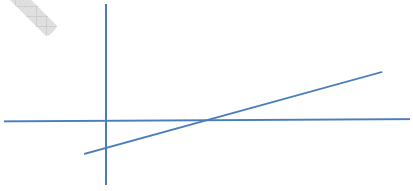
e) it cuts the x-axis at 1 points ,so 1 zero's

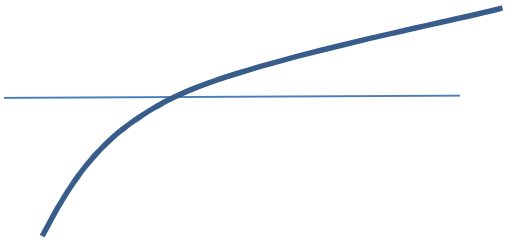
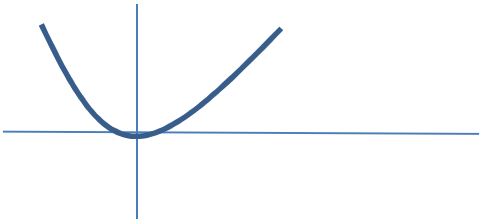
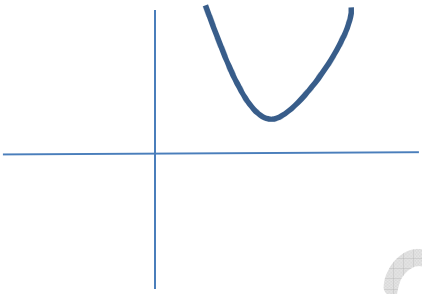
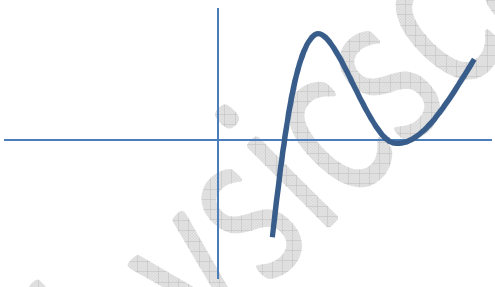
f) Since it does not cut the axis, so 0 zeroes

g) Since it does not cut the axis, so 0 zeroes

h) it cuts the x-axis at two points ,so 2 zeroes

Match the column

Graph of polynomial	Type of polynomial
	Linear polynomial
	Quadratic polynomial
	Cubic polynomial
	Constant polynomial

Solution

a) Quadratic as parabola

b) Three zeroes,So cubic polynomial

c) Contant value polynomial

d) Linear polynomial

e) One zeroes but not straight line. So no appropriate match found

f) Quadratic as parabola

g) Quadratic as parabola

e) Cubic as has three zeroes ,two of them same

Multiple Choice Questions

1) If and b are the zeroes of the polynomial $x^2-11x+30$, Find the value of $a^3 + b^3$

a)134

b)412

c)256

d)341

Solution

$a^3 + b^3= (a+b)(a^2+b^2-ab)=(a+b)\{(a+b)^2 -3ab\}$

Now $a+b=-(-11)/1=11$

$ab=30$

So $a^3+b^3=11(121 -90)=341$

2) $S(x) = px^2+(p-2)x+2$. If 2 is the zero of this polynomial,what is the value of p

a)-1

b)1/2

c) -1/2

d)+1

Solution

$S(2)=4p+0+2=0 \Rightarrow p=-1/2$

3) if the zeroes of the quadratic equation are 11 and 2 ,what is expression for quadratic

a) x^2-13x+22

b) x^2-11x+22

c) x^2-13x-22

d) x^2+13x-22

Solution (a)

P(x) =(x-11)(x-2)

4) $p(x) = x^4 - 6x^3 + 16x^2 - 25x + 10$

$q(x) = x^2 - 2x + k$

It is given

p(x) = r(x) q(x) + (x+a)

Find the value of k and a

a) 2,-2

b) 5 ,-5

c) 7,3

d) 3,-1

Solution (b)

Dividing p(x) by q(x) ,we get the remainder

(2k-9)x –(8-k)k +10

Comparing this with (x+a)

We get

K=5 and a=-5

5) A cubic polynomial is given below

$S(x) = x^3 - 3x^2 + x + 1$

The zeroes of the polynomial are given as (p-q) ,p and (p+q). What is the value p and q

a) 1 ,$\sqrt{2}$

b) 1,-2

c) 1,2

d) None of these

Solution (a)

Division of polynomial

s(x) =r(x) s(x) + w(x)

Find the value of r(x) and w(x) in each case

a) $p(x) = x^4 + x^3 + 2x^2 + 3x + 4$

$s(x) = x + 2$

b) $p(x) = x^4 + 4$

$s(x) = x^2 + x + 1$

Solution

a) $r(x) = x^3 - x^2 + 4x - 5$ $w(x) = 14$

b) $r(x) = x^2 - x$ $w(x) = x + 4$