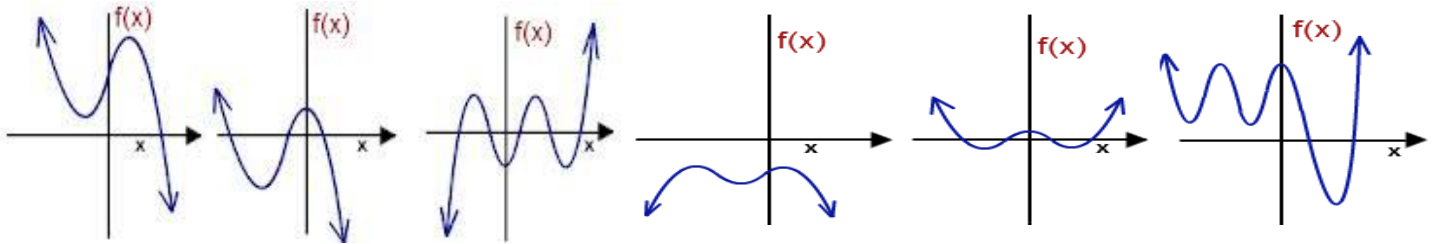


## Assignment: POLYNOMIALS

Q1. Find the number of zeros of the polynomial and write the name for each



Q2. Find all zeros of the polynomial & establish a relationship between zeros and coefficients:

A.  $x^2 + 5x + 6 = 0$

F.  $x^2 - x - 6 = 0$

K.  $x^2 + x - 2 = 0$

B.  $x^2 + 3x - 10 = 0$

G.  $x^2 - 4x - 21 = 0$

L.  $x^2 - 11x + 30 = 0$

C.  $x^2 - 7x + 12 = 0$

H.  $x^2 - 10x + 16 = 0$

M.  $x^2 + 11x - 60 = 0$

D.  $x^2 + 7x + 10 = 0$

I.  $x^2 - 4x - 45 = 0$

N.  $x^2 + x - 72 = 0$

E.  $x^2 - 3x - 4 = 0$

J.  $x^2 - 9x + 18 = 0$

O.  $x^2 - 9x - 52 = 0$

Q3. Find all zeros of the polynomial & establish a relationship between zeros and coefficients:

A.  $2x^2 + 7x - 4 = 0$

E.  $6x^2 - 19x + 10 = 0$

I.  $15x^2 - 7x - 2 = 0$

B.  $3x^2 - 2x - 5 = 0$

F.  $2x^2 + x - 6 = 0$

J.  $2x^2 - x - 21 = 0$

C.  $5x^2 + 13x - 6 = 0$

G.  $10x^2 - 23x + 12 = 0$

D.  $2x^2 - 7x + 3 = 0$

H.  $7x^2 - 11x + 4 = 0$

Q4. Find all zeros of the polynomial & establish a relationship between zeros and coefficients:

A.  $3x^2 - 6x = 0$

G.  $15x^2 - 5 = 0$

M.  $x^2 + 3 - 4x = 0$

B.  $4x^2 - 9 = 0$

H.  $7x^2 - 14 = 0$

N.  $3y^2 + 4 - 7y = 0$

C.  $x^2 - 2x = 0$

I.  $x - 5x^2 = 0$

O.  $t^2 - 3 - 2t = 0$

D.  $x^2 - 25 = 0$

J.  $x^2 - 25 = 0$

P.  $3x^2 + 2 - 7x = 0$

E.  $x^2 - 6x = 0$

K.  $x^2 - 2 + x = 0$

F.  $2x^2 - 32 = 0$

L.  $x + \frac{4}{x} = 5$

Q5. Find a quadratic polynomial the sum and product of whose zeros are:

A. 3 and  $\frac{1}{2}$

B. -3,  $\frac{4}{3}$

C. 3,  $-\frac{4}{5}$

D. a+b and a-b

Q6. Find a quadratic polynomial whose zeros are as;

A. 3 & -5

E. -5 &  $-\frac{2}{3}$

I.  $-\frac{9}{2}$  &  $\frac{4}{5}$

B. 2 &  $\frac{1}{2}$

F. 6 & -5

J. -2 &  $-\frac{2}{3}$

C. 3 &  $-\frac{1}{3}$

G.  $\sqrt{2}$  &  $-\sqrt{2}$

D. 4 &  $\frac{2}{3}$

H.  $\frac{2}{3}$  &  $\frac{3}{2}$

Q7. Verify that the given numbers alongside of the cubic polynomial below are zeros. Also verify the relationship between the zeros and coefficients in each case:

A.  $x^3 - 4x^2 + 5x - 2 = 0$ ; 2, 1, 1

B.  $2x^3 + x^2 - 5x + 2 = 0$ ; 1, -2,  $\frac{1}{2}$

C.  $3x^3 - 5x^2 - 11x - 3 = 0$ ; 3, -1,  $-\frac{1}{3}$

Q8. Find a cubic polynomial whose sum, sum of zeros taken two at a time and product of zeros are

(i) 2, -7 and -14

(ii) 2,  $-\frac{3}{2}$ , 1, 2

Q9. Verify the division algorithm and check the polynomial is a factor or not

A. Divide  $2x^2 + 3x + 1$  by  $2 + x$

B. Divide  $3x^3 + x^2 + 2x + 5$  by  $x^2 + 2x + 1$

C. Divide  $4x^3 + 8x + 8x^2 + 7$  by  $2x^2 - x + 1$

D. Divide  $x^3 - 3x^2 + 5x - 3$  by  $x^2 - 2$

E. Divide  $x^3 - 4x^2 + 5x - 2$  by  $x^2 - 2 + x$

F. Divide  $3x^4 + 5x^3 - 7x^2 + 2x + 2$  by  $x^2 + 3x + 1$

G. Divide  $x^4 + x^3 - 4x^2 + 5x - 2$  by  $x^2 - 2 + x$

H. Divide  $x^4 - 5x + 6$  by  $2 - x^2$

I. Divide  $2t^4 + 3t^3 - 2t^2 - 9t - 12$  by  $t^2 - 3$

J. Divide  $x^5 - 4x^3 + x^2 + 3x + 1$  by  $x^3 - 3x + 1$

K. Divide  $6x^5 - x^4 + 4x^3 - 5x^2 - x - 15$  by  $2x^2 - x + 3$

L. Divide  $x^4 - 1$  by  $x - 1$

Q10. Find all zeros of polynomial if zeros are given alongside

A.  $x^2 + 5x + 6$ :  $x = -1$

B.  $x^3 + 13x^2 + 32x + 20 = 0$ :  $x = -2$

C.  $2x^3 + x^2 - 6x - 6 = 0$ :  $x = \sqrt{3}, -\sqrt{3}$

D.  $x^3 + 3x^2 - 2x - 6 = 0$ :  $x = \sqrt{2}, -\sqrt{2}$

E.  $x^3 - 4x^2 - 3x + 12 = 0$ :  $x = \sqrt{3}, -\sqrt{3}$

F.  $x^4 + x^3 - 34x^2 - 4x + 120 = 0$ :  $x = -2, 2$

G.  $2x^4 + 7x^3 - 19x^2 - 14x - 30 = 0$ :  $x = \sqrt{2}, -\sqrt{2}$

H.  $2x^4 - 3x^3 - 3x^2 + 6x - 2 = 0$ :  $x = \sqrt{2}, -\sqrt{2}$

I.  $2x^4 - 3x^3 - 3x^2 + 6x - 2 = 0$ :  $x = 1$  &  $\frac{1}{2}$

J.  $3x^4 + 6x^3 - 2x^2 - 10x - 5 = 0$ :  $x = \sqrt{\frac{5}{3}}, -\sqrt{\frac{5}{3}}$

K.  $2x^4 - 2x^3 - 7x^2 + 3x + 6 = 0$ :  $x = \sqrt{\frac{3}{2}}, -\sqrt{\frac{3}{2}}$

L.  $x^4 - 6x^3 - 26x^2 + 138x - 35 = 0$ :  $x = 2 \pm \sqrt{3}$