EduSahara™ Assignment

Name : Zeroes of a Cubic Polynomial

Chapter : Polynomials

Grade : SSC Grade X

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1. If α, β, γ are the roots of the cubic equation $(360x^3 - 673x^2 + 408x - 80) = 0$, find $\alpha + \beta + \gamma$

   (i) $(-\frac{2}{9})$ (ii) $\frac{2}{9}$ (iii) $(-\frac{673}{360})$ (iv) $\frac{673}{360}$ (v) $\frac{17}{15}$

2. If α, β, γ are the roots of the cubic equation $(60x^3 - 316x^2 + 387x - 56) = 0$, find $\alpha\beta + \beta\gamma + \gamma\alpha$

   (i) $\frac{14}{15}$ (ii) $\frac{129}{20}$ (iii) $\frac{79}{15}$ (iv) $(-\frac{129}{20})$ (v) $(-\frac{14}{15})$

3. If α, β, γ are the roots of the cubic equation $(405x^3 - 1179x^2 + 935x - 225) = 0$, find $\alpha\beta\gamma$

   (i) $(-\frac{187}{81})$ (ii) $\frac{5}{9}$ (iii) $\frac{187}{81}$ (iv) $(-\frac{5}{9})$ (v) $\frac{131}{45}$

4. If one of the roots of the cubic equation $(210x^3 - 289x^2 + 107x - 10) = 0$ is $\frac{5}{6}$, find the remaining real roots

   (i) $(\frac{2}{5}, \frac{1}{7})$ (ii) $(\frac{1}{2}, 0)$ (iii) $(\frac{7}{6}, \frac{4}{5})$ (iv) $(\frac{5}{8}, \frac{2}{7})$ (v) $(\frac{5}{4}, \frac{2}{3})$

5. If one of the roots of the cubic equation $(x^3 - 14x^2 + 51x - 54) = 0$ is 2, find the remaining real roots

   (i) $(0, 7)$ (ii) $(1, 8)$ (iii) $(3, 10)$ (iv) $(9, 3)$ (v) $(4, 12)$

6. If $\alpha = \frac{8}{9}, \beta = \frac{7}{6}, \gamma = \frac{5}{8}$ are the roots of the cubic equation $ax^3 + bx^2 + cx + d = 0$, then find $\frac{b}{a}$

   (i) $(-\frac{193}{72})$ (ii) $\frac{1003}{432}$ (iii) $(-\frac{35}{54})$ (iv) $(-\frac{1003}{432})$ (v) $\frac{193}{72}$

7. If $\alpha = \frac{4}{7}, \beta = \frac{8}{7}, \gamma = \frac{1}{6}$ are the roots of the cubic equation $ax^3 + bx^2 + cx + d = 0$, then find $\frac{c}{a}$

   (i) $\frac{79}{42}$ (ii) $(-\frac{46}{49})$ (iii) $(-\frac{16}{147})$ (iv) $\frac{46}{49}$ (v) $(-\frac{79}{42})$

8. If $\alpha = \frac{1}{3}, \beta = \frac{8}{5}, \gamma = \frac{1}{6}$ are the roots of the cubic equation $ax^3 + bx^2 + cx + d = 0$, then find $\frac{d}{a}$

   (i) $\frac{77}{90}$ (ii) $(-\frac{21}{10})$ (iii) $(-\frac{77}{90})$ (iv) $\frac{4}{45}$ (v) $(-\frac{4}{45})$

9. If $(x - a)$ is a factor of $x^3 - ax^2 - 8x - 16$, find the value of a

   (i) (-2) (ii) (-3) (iii) 1 (iv) (-1) (v) (-5)

10. If α, β, γ are the roots of the cubic equation $(36x^3-48x^2+19x-2)=0$, find $\alpha+\beta+\gamma$

(i) $(-\frac{4}{3})$ (ii) $\frac{19}{36}$ (iii) $(-\frac{19}{36})$ (iv) $(-\frac{1}{18})$ (v) $\frac{4}{3}$

11. If α, β, γ are the roots of the cubic equation $(80x^3-386x^2+119x-9)=0$, find $\alpha\beta+\beta\gamma+\gamma\alpha$

(i) $(-\frac{9}{80})$ (ii) $(-\frac{193}{40})$ (iii) $(-\frac{119}{80})$ (iv) $\frac{9}{80}$ (v) $\frac{119}{80}$

12. If α, β, γ are the roots of the cubic equation $(126x^3-149x^2+51x-4)=0$, find $\alpha\beta\gamma$

(i) $(-\frac{2}{63})$ (ii) $\frac{149}{126}$ (iii) $\frac{2}{63}$ (iv) $(-\frac{17}{42})$ (v) $(-\frac{149}{126})$

13. If one of the roots of the cubic equation $(189x^3-717x^2+628x-160)=0$ is $\frac{8}{3}$, find the remaining real roots

(i) $(\frac{10}{3}, \frac{7}{9})$ (ii) $(\frac{5}{9}, \frac{4}{7})$ (iii) $(4, \frac{5}{7})$ (iv) $(\frac{12}{5}, \frac{5}{11})$ (v) $(2, \frac{1}{3})$

14. If one of the roots of the cubic equation $(x^3-14x^2+21x+216)=0$ is 8, find the remaining real roots

(i) $(7, 8)$ (ii) $(11, 12)$ (iii) $(5, 7)$ (iv) $(9, 10)$ (v) $(9, (-3))$

15. If $\alpha=\frac{9}{2}, \beta=\frac{1}{5}, \gamma=\frac{8}{7}$ are the roots of the cubic equation $ax^3+bx^2+cx+d=0$, then find $\frac{b}{a}$

(i) $\frac{409}{70}$ (ii) $(-\frac{439}{70})$ (iii) $(-\frac{409}{70})$ (iv) $(-\frac{36}{35})$ (v) $\frac{36}{35}$

16. If $\alpha=\frac{7}{3}, \beta=\frac{2}{7}, \gamma=\frac{2}{9}$ are the roots of the cubic equation $ax^3+bx^2+cx+d=0$, then find $\frac{c}{a}$

(i) $(-\frac{179}{63})$ (ii) $(-\frac{236}{189})$ (iii) $\frac{179}{63}$ (iv) $\frac{236}{189}$ (v) $\frac{4}{27}$

17. If $\alpha=\frac{2}{5}, \beta=\frac{4}{9}, \gamma=\frac{3}{7}$ are the roots of the cubic equation $ax^3+bx^2+cx+d=0$, then find $\frac{d}{a}$

(i) $(-\frac{34}{63})$ (ii) $\frac{8}{105}$ (iii) $(-\frac{8}{105})$ (iv) $(-\frac{401}{315})$ (v) $\frac{401}{315}$

Assignment Key

1) (iv)	2) (ii)	3) (ii)	4) (i)	5) (iv)	6) (i)
7) (iv)	8) (v)	9) (i)	10) (v)	11) (v)	12) (iii)
13) (ii)	14) (v)	15) (iii)	16) (iv)	17) (iii)	

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