DPP #18

#LP 1 : If two positive integers a and b are written as a = $x^4 y^2$ and b = $x^3 y$, where x, y are prime numbers, then find HCF (a, b).

#LP 2 : If the LCM of 12 and 42 is 10 m + 4, then the value of m is:
a. 50 b. 8 c. $\frac{1}{5}$ d. 1

#LP 3 : If the point (2p - 3, p + 2) lies on the line 2x + 3y = -15 then the value of p is :
a. $-\frac{7}{15}$ b. $\frac{7}{15}$ c. $\frac{15}{7}$ d. $-\frac{15}{7}$

#LP 4 : Sunita has X rupees more than vinay has. Together they have a total of Y rupees, the equations which represents the rupees vinay has:
a. $\frac{Y-X}{2}$ b. $\frac{Y-X}{2}$ c. $\frac{Y-X}{2}$ d. 2Y - X

#LP 5 : A fraction becomes $\frac{1}{3}$ when 1 is subtracted from the numerator and it becomes $\frac{1}{4}$ when 8 is added to its denominator . Find the fraction .

#LP 6 : If the zeroes of the polynomial f (x) = $k^2 x^2$ - 17x + k + 2 , (k>0) are reciprocal of each other than value of k is :
a. 2 b. - 1 c. - 2 d. 1

#LP 7 : A polynomial in the following is:
a. $7x^2 - 5\sqrt{x} + \sqrt{5}$ b. $t^3 - 2t + 1$ c. $x^2 - \frac{1}{x^2}$ d. $\sqrt{y} + 5y - 1$

#LP 8 : If one of the zeros of polynomial $a^2x^2 + x + b^2$ is – 1 then:
a. $a^2 + b^2 = 0$ b. $a^2 + b^2 - 1 = 0$
c. $a^2 - b^2 + 1 = 0$ d. $a^2 + b^2 = -1$

#LP 9 : If α and β are the zeroes of the polynomial $25x^2 - 16$, then $\alpha^2 + \beta^2$ is :
a. $\frac{32}{25}$ b. $\frac{25}{32}$ c. $\frac{25}{16}$ d. $\frac{16}{25}$

#LP 10 : The degree of the polynomial $(x +1)(x^2 - x - x^4+1)$ is

a. 4 b. 1 c. 5 d. 2

#LP 11 : If α and β are the zeroes of the quadratic polynomial $f (t)= t^2 – 4t + 3$, then the value of $\alpha^4\beta^3 + \alpha^4\beta^3$ is:

a. 104 b. 108 c. 122 d.5

#LP 12 : If α, β are the zeroes of the polynomial $f (x) = x^2 – 3x + 2$, then find $\frac{1}{\alpha} + \frac{1}{\beta}$.

#LP 13 : If α and β are the zeroes of the polynomial $f (x) = 4x^2 – 5x + 1$, find a quadratic polynomial whose zeroes are $\frac{\alpha^2}{\beta}$ and $\frac{\beta^2}{\alpha}$.

#LP 14 : If α and β are the zeroes of the quadratic polynomial $f(x) = x^2 – px + q$, prove that $\frac{\alpha^2}{\beta^2} + \frac{\beta^2}{\alpha^2} = \frac{p^4}{q^2} - \frac{4p^2}{q} + 2$.