Class 09 Number System CBSE Guess Questions

Q. 1 Find the value of each of the following

i. $16^{3/4}$ ii. $125^{-1/3}$ iii. $5^{3/2}.7^{3/2}$

Q. 2 Find five rational number between $\frac{3}{7}$ and $\frac{4}{7}$

Q. 3 Divide in each of the following

i. $\sqrt{162}$ *by* $\sqrt{2}$ ii. $\sqrt[7]{10}$ *by* $\sqrt[7]{2}$

Q. 4 Express 0.6 in the form $\frac{p}{q}$, where p and q are integers and q≠0.

Q. 5 Simplify each of the following:

i. $7\sqrt{2}+5\sqrt{8}$

ii. $15\sqrt{6}-\sqrt{216}$

iii. $8\sqrt{45}-8\sqrt{20}+\sqrt{245}-3\sqrt{125}$

Q. 6 Evaluate each of the following:

i. $5^{3/2}.7^{3/2}$ ii. $\frac{11^{5/2}}{11^{3/2}}$

Q. 7 Rationalise the denominators of the following

i. $\frac{1}{\sqrt{7}-\sqrt{6}}$ ii. $\frac{1}{\sqrt{5}+\sqrt{2}}$

Q. 8 Simplify: $[5^2(8^{1/3}+27^{1/3})^3]^{1/5}$

Q. 9 Show that 0.3333...=0.3 can be expressed in the form of p/q, where p and q are integer sand q is ≠ 0

Q. 10 Find the values of 'a' and 'b' if $\frac{1}{7+3\sqrt{2}} = a+b\sqrt{2}$

Q. 11 Show that 1.272727... can be expressed in the form of $\frac{p}{q}$ where p and q are integers and q ≠ 0.

Q. 12 Rationalise the denominator of each of the following

i. $\frac{\sqrt{3}+1}{\sqrt{3}-1}$ ii. $\frac{1}{1+\sqrt{2}-\sqrt{3}}$ iii. $\frac{1}{\sqrt{3}+\sqrt{2}-\sqrt{5}}$

Q. 13 If $a = 6-\sqrt{35}$, find the value of **a^2 + 1/a^2**

Q. 14 If $x = 3+2\sqrt{2}$ find the value of (i) $x^2+\frac{1}{x^2}$ (*ii*) $x^4+\frac{1}{x^4}$

Q. 15 Simplify each of the following

i. $\frac{7+3\sqrt{5}}{3+\sqrt{5}}-\frac{7-3\sqrt{5}}{3-\sqrt{5}}$ ii. $\frac{\sqrt{5}-2}{\sqrt{5}+2}-\frac{\sqrt{5}+2}{\sqrt{5}-2}$

iii. $\frac{2\sqrt{6}}{\sqrt{2}+\sqrt{3}}+\frac{6\sqrt{2}}{\sqrt{6}+\sqrt{3}}-\frac{8\sqrt{3}}{\sqrt{6}+\sqrt{2}}$

Q. 16 If $\frac{3+2\sqrt{2}}{3-\sqrt{2}} = x+y\sqrt{2}$, find x and y where x and y are rational numbers.

Q. 17 If $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a-\sqrt{3}, b$ find a and b where a and b are rational numbers.