EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Rational and Irrational Numbers

Grade : ICSE Grade IX

1. Which of the following is true?

   (i) $6.49 < 9.54$ (ii) $8.62 > 10.27$ (iii) $7.17 < 5.32$ (iv) $5.31 < 1.33$ (v) $10.13 < 0.18$

2. The multiplicative inverse of $\frac{6}{5}$ is

   (i) $1\frac{5}{6}$ (ii) $\frac{5}{6}$ (iii) $2\frac{5}{6}$ (iv) $(\frac{-1}{6})$ (v) $(-1\frac{1}{6})$

3. The decimal number 0.010 lies between

   (i) {0,1} (ii) {2,3} (iii) {-1,0} (iv) {-2,-1} (v) {1,2}

4. The additive inverse of $(\frac{-1}{9})$ is

   (i) $\frac{1}{9}$ (ii) $\frac{9}{-1}$ (iii) $(\frac{-8}{9})$ (iv) $\frac{9}{1}$ (v) 0

5. $\sqrt{6} \div 5\sqrt{8} =$

   (i) $\frac{1}{20}\sqrt{12}$ (ii) $\frac{3}{5}$ (iii) $\frac{1}{20}\sqrt[4]{12}$ (iv) $\frac{1}{20}\sqrt{14}$ (v) $\frac{1}{20}\sqrt{10}$

6. $(-\sqrt{5}-2\sqrt{8}) \times (-8\sqrt{3}+5\sqrt{2}) =$

   (i) $(8\sqrt{12}+32\sqrt{6}-5\sqrt{10}-40)$ (ii) $(8\sqrt{15}+32\sqrt{6}-5\sqrt[4]{10}-40)$ (iii) $(8\sqrt{15}+32\sqrt[4]{6}-5\sqrt{10}-40)$

   (iv) $(8\sqrt{15}+32\sqrt{6}-5\sqrt{10}-40)$ (v) $(8\sqrt{15}+32\sqrt{6}-5\sqrt{10}-37)$

7. $(\sqrt[3]{6}+2\sqrt[3]{7}-\sqrt[3]{3}) + (-8\sqrt[3]{8}-\sqrt[3]{5}+8\sqrt[3]{4}) =$

   (i) $(\sqrt[3]{3}+2\sqrt[3]{7}-\sqrt[3]{3}-8\sqrt[3]{8}-\sqrt[3]{5}+8\sqrt[3]{4})$ (ii) $(\sqrt[3]{6}+2\sqrt[5]{7}-\sqrt[3]{3}-8\sqrt[3]{8}-\sqrt[3]{5}+8\sqrt[3]{4})$

   (iii) $(\sqrt[3]{6}+2\sqrt[3]{7}-\sqrt[3]{3}-8\sqrt[3]{10}-\sqrt[3]{5}+8\sqrt[3]{4})$ (iv) $(\sqrt[3]{6}+2\sqrt[3]{7}-\sqrt[5]{3}-8\sqrt[3]{8}-\sqrt[3]{5}+8\sqrt[3]{4})$

   (v) $(\sqrt[3]{6}+2\sqrt[3]{7}-\sqrt[3]{3}-8\sqrt[3]{8}-\sqrt[3]{5}+8\sqrt[3]{4})$

8. Which of the following fractions converts to a non-terminating recurring decimal?

   (i) $\frac{525}{4}$ (ii) $\frac{2100}{32}$ (iii) $\frac{146}{9}$ (iv) $\frac{533}{8}$ (v) $\frac{3952}{320}$

9. The decimal number 52.8 lies between

   (i) {51,52} (ii) {52,53} (iii) {54,55} (iv) {53,54} (v) {50,51}

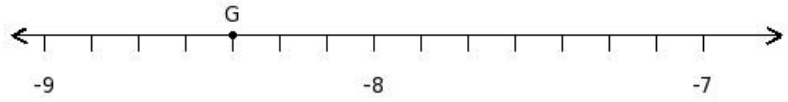
10. $\sqrt[2]{\sqrt[3]{3}}$ =

(i) $\sqrt[6]{6}$ (ii) $\sqrt[6]{\frac{1}{3}}$ (iii) $\sqrt[6]{3}$ (iv) $\sqrt[6]{3^5}$

11. The decimal number -94.8 lies between

(i) {-97,-96} (ii) {-95,-94} (iii) {-93,-92} (iv) {-94,-93} (v) {-96,-95}

12. Find the rational number at the point labelled with letter G



(i) $(\frac{-59}{5})$ (ii) $(\frac{-61}{7})$ (iii) $(\frac{-59}{9})$ (iv) $(\frac{-59}{7})$ (v) $(\frac{-57}{7})$

13. $\frac{8\sqrt{7}}{8\sqrt{3}}$ =

(i) $\sqrt{\frac{5}{3}}$ (ii) $\sqrt[4]{\frac{7}{3}}$ (iii) $\sqrt{3}$ (iv) $\sqrt{\frac{7}{3}}$ (v) $\frac{7}{3}$

14. The order of the surd $\frac{3}{5}\sqrt[9]{33}$ is

(i) 33 (ii) $\frac{1}{9}$ (iii) $\frac{3}{5}$ (iv) 9 (v) $\sqrt[9]{33}$

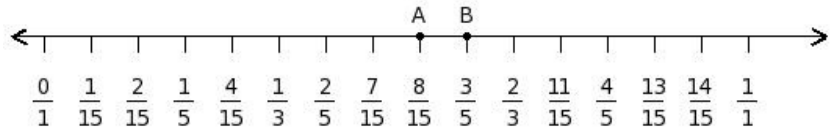
15. Express $\frac{2}{7}$ as a decimal correct to 1 decimal places

(i) 0.1 (ii) 0.5 (iii) 0.4 (iv) 0.3 (v) 0.2

16. Rationalise the denominator of $\frac{1}{\sqrt{6}}$

(i) $\frac{1}{6}\sqrt{6}$ (ii) $\frac{1}{6}\sqrt{8}$ (iii) $\frac{1}{6}\sqrt{3}$ (iv) 1 (v) $\frac{1}{6}\sqrt[4]{6}$

17. Find the difference between the values of numbers at point A and B



(i) $(\frac{-1}{5})$ (ii) $(\frac{-1}{13})$ (iii) $\frac{1}{15}$ (iv) $(\frac{-1}{15})$ (v) $(\frac{-1}{17})$

18. Which of the following symbols represent the set of Integers ?

(i) Q' (ii) Q (iii) N (iv) R (v) Z

19. Simplify $\frac{\sqrt{2}}{(\sqrt{4}+\sqrt{3})} + \frac{(-\sqrt{2})}{(\sqrt{2}-\sqrt{3})} - \frac{(-\sqrt{4})}{(\sqrt{2}+\sqrt{4})}$

(i) $(\sqrt{-1}+4)$ (ii) $(\sqrt{5}+4)$ (iii) $(\sqrt{2}+5)$ (iv) $(\sqrt{2}+4)$ (v) $(\sqrt{2}+3)$

20. Convert the non-terminating recurring decimal $8.\overline{476190}$ to rational number

(i) $\frac{178}{23}$ (ii) $\frac{60}{7}$ (iii) $\frac{176}{21}$ (iv) $\frac{178}{19}$ (v) $\frac{178}{21}$

21. Which of the following symbols represent the set of Rational numbers ?

(i) Q (ii) N (iii) R (iv) W (v) Z

22. $(8\sqrt{3}-5\sqrt{4})-(6\sqrt{9}+\sqrt{2})=$

(i) $(8\sqrt{3}-28-\sqrt[4]{2})$ (ii) $(8\sqrt{3}-31-\sqrt{2})$ (iii) $(8\sqrt{3}-28-\sqrt{2})$ (iv) $(8\sqrt{3}-25-\sqrt{2})$ (v) $(8\sqrt{3}-28-2)$

23. Which of the following are true?

a) $\frac{17}{2}\times(\frac{61}{15}-\frac{13}{16})=(\frac{17}{2}\times\frac{61}{15})-(\frac{17}{2}\times\frac{13}{16})$

b) $\frac{12}{5}-(\frac{61}{15}\times\frac{17}{3})=(\frac{12}{5}-\frac{61}{15})\times(\frac{12}{5}-\frac{17}{3})$

c) $\frac{17}{2}\times(\frac{38}{9}+\frac{2}{19})=(\frac{17}{2}\times\frac{38}{9})+(\frac{17}{2}\times\frac{2}{19})$

d) $\frac{12}{5}\div(\frac{38}{9}+\frac{7}{6})=(\frac{12}{5}\div\frac{38}{9})+(\frac{12}{5}\div\frac{7}{6})$

(i) {d,c} (ii) {a,c} (iii) {b,c,a} (iv) {b,d,a} (v) {b,a}

24. Which of the following is a biquadratic surd?

(i) $9\sqrt{9}$ (ii) $3\sqrt[3]{6}$ (iii) $(-2\sqrt[4]{3})$ (iv) $\sqrt[7]{9}$ (v) $(-4\sqrt[5]{8})$

25. Express $\frac{1}{10}$ as a decimal correct to 1 decimal places

(i) 0.1 (ii) 0.2 (iii) 0 (iv) -0.1 (v) 1

Assignment Key

1) (i)	2) (ii)	3) (i)	4) (i)	5) (i)	6) (iv)
7) (v)	8) (iii)	9) (ii)	10) (iii)	11) (ii)	12) (iv)
13) (iv)	14) (iv)	15) (iv)	16) (i)	17) (iv)	18) (v)
19) (iv)	20) (v)	21) (i)	22) (iii)	23) (ii)	24) (iii)
25) (i)					