EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Rational and Irrational Numbers

Grade : ICSE Grade IX

1. Which of the following fractions converts to a terminating decimal?

   (i) $\frac{95}{153}$ (ii) $\frac{3332}{160}$ (iii) $\frac{95}{9}$ (iv) $\frac{19}{9}$ (v) $\frac{182}{9}$

2. Convert the non-terminating recurring decimal $26.11111111111111...$ to rational number

   (i) $\frac{233}{9}$ (ii) $\frac{235}{11}$ (iii) $\frac{235}{7}$ (iv) $\frac{79}{3}$ (v) $\frac{235}{9}$

3. Which of the following decimal numbers lie between 7683 and 7684?

   (i) 7683.9 (ii) 7684.9 (iii) 76838.9 (iv) 768.4 (v) 7682.9

4. The decimal number -1.196 lies between

   (i) {0,1} (ii) {-4,-3} (iii) {-2,-1} (iv) {-3,-2} (v) {-1,0}

5. $(21-\sqrt{6}-5\sqrt{3})-(5\sqrt{2}-3+9\sqrt{3})=$

   (i) $(21-\sqrt{6}-14\sqrt{3}-5\sqrt{2})$ (ii) $(24-\sqrt[4]{6}-14\sqrt{3}-5\sqrt{2})$ (iii) $(24-\sqrt{6}-14\sqrt{3}-5\sqrt{2})$ (iv) $(24-\sqrt{6}-14\sqrt[4]{3}-5\sqrt{2})$

   (v) $(24-\sqrt{6}-14\sqrt{3}-5\sqrt{5})$

6. The multiplicative inverse of $\frac{2}{9}$ is

   (i) $3\frac{1}{2}$ (ii) $\frac{9}{2}$ (iii) $2\frac{1}{2}$ (iv) $6\frac{1}{2}$ (v) $5\frac{1}{2}$

7. $(-6\sqrt{8})+3\sqrt{8}=$

   (i) $(-6\sqrt[4]{2})$ (ii) $(-6\sqrt{\frac{1}{2}})$ (iii) $(-6\sqrt{4})$ (iv) (-12) (v) $(-6\sqrt{2})$

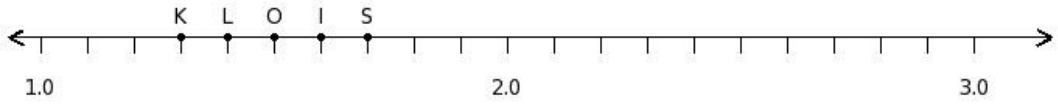
8. Express $\frac{10}{7}$ as a decimal correct to 2 decimal places

   (i) 1.63 (ii) 1.53 (iii) 1.43 (iv) 1.33 (v) 1.23

9. Which of the following is a decimal fraction?

   (i) $2\frac{12}{19}$ (ii) $\frac{7}{10}$ (iii) $\frac{20}{13}$ (iv) $\frac{1}{8}$ (v) $19\frac{3}{8}$

10. Find the position of the decimal number 1.4 on the number line



(i) S (ii) O (iii) I (iv) L (v) K

11. The recurring part of the decimal 3.48148148148148... is

(i) 3.481 (ii) 48143 (iii) 481481 (iv) 4814481 (v) 481

12. Rationalise the denominator of $\frac{1}{(-\sqrt{2}-\sqrt{5}-\sqrt{3})}$

(i) $(-\frac{1}{6}\sqrt{3}+\frac{1}{12}\sqrt{28}-\frac{1}{4}\sqrt{2})$ (ii) $(-\frac{1}{6}\sqrt{3}+\frac{1}{12}\sqrt{30}-\frac{1}{4}\sqrt{2})$ (iii) $(-\frac{1}{6}\sqrt{3}+\frac{1}{12}\sqrt{32}-\frac{1}{4}\sqrt{2})$

(iv) $(-\frac{1}{6}\sqrt{3}+\frac{1}{12}\sqrt{30}-\frac{1}{2})$ (v) $(-\frac{1}{6}\sqrt{3}+\frac{1}{12}\sqrt{30}-\frac{1}{4}\sqrt{2})$

13. Which of the following is a cubic surd?

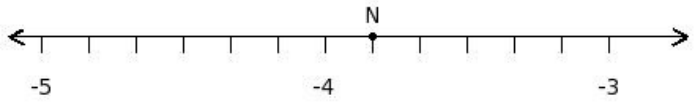
(i) $(-7\sqrt[5]{6})$ (ii) $4\sqrt[4]{9}$ (iii) $(-\sqrt{9})$ (iv) $7\sqrt[3]{3}$ (v) $(-\sqrt[8]{8})$

If $\sqrt{2} = 1.4142$, $\sqrt{3} = 1.7321$, $\sqrt{5} = 2.2361$, $\sqrt{7} = 2.6458$,

14. the value of $\frac{8\sqrt{9}}{\sqrt{10}}$ =

(i) 9.589 (ii) 6.589 (iii) 7.589 (iv) 5.589 (v) 8.589

15. Find the rational number at the point labelled with letter N



(i) $(\frac{-23}{6})$ (ii) $(\frac{-23}{4})$ (iii) $(\frac{-23}{8})$ (iv) $(\frac{-7}{2})$ (v) $(\frac{-25}{6})$

16. Which of the following are true?

a) $\frac{6}{13} \div \frac{105}{11} = \frac{105}{11} \div \frac{6}{13}$

b) $\frac{8}{19} \times \frac{105}{11} = \frac{105}{11} \times \frac{8}{19}$

c) $\frac{6}{13} - \frac{100}{9} = \frac{100}{9} - \frac{6}{13}$

d) $\frac{8}{19} + \frac{100}{9} = \frac{100}{9} + \frac{8}{19}$

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

17. 1.5 =

(i) $\frac{3}{200}$ (ii) $\frac{3}{2}$ (iii) $\frac{3}{20}$ (iv) 150 (v) 15

18. Which of the following is a biquadratic surd?

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

19. Which of the following decimal numbers lie between 4758.844 and 4758.845?

(i) 4758.8435 (ii) 47588.445 (iii) 475.8845 (iv) 4758.8445 (v) 4758.846

20. 3.51 =

(i) $\frac{351}{100}$ (ii) $\frac{351}{10000}$ (iii) $\frac{351}{1000}$ (iv) $\frac{351}{10}$ (v) 351

21. Convert the fraction $\frac{520}{21}$ to non-terminating recurring decimal

(i) $0.2\overline{476190}$ (ii) $2.\overline{476190}$ (iii) $24.\overline{761904}$ (iv) $2476.\overline{190476}$ (v) $247.\overline{619047}$

22. Which of the following is true?

(i) $0.50 > 1.70$ (ii) $1.05 < 7.67$ (iii) $9.74 < 6.69$ (iv) $10.06 < 3.64$ (v) $6.38 > 7.89$

23. 1.745 =

(i) $\frac{349}{2000}$ (ii) $\frac{349}{20000}$ (iii) $\frac{349}{2}$ (iv) $\frac{349}{20}$ (v) $\frac{349}{200}$

24. $\sqrt[3]{14^4}$ =

(i) $17^{(\frac{4}{3})}$ (ii) $11^{(\frac{4}{3})}$ (iii) 14^4 (iv) $14^{(\frac{3}{4})}$ (v) $14^{(\frac{4}{3})}$

25. $26^{(\frac{1}{9})}$ =

(i) $\sqrt[9]{26}$ (ii) $\sqrt[9]{29}$ (iii) $\sqrt[1]{9^{26}}$ (iv) $\sqrt[9]{24}$ (v) $\sqrt[7]{26}$

Assignment Key

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