

EduSahara™ Learning Center Assignment

Grade : Class IX, SSC

Chapter : Real Numbers

Name : Concepts

1. Which of the following is a second order surd?

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

2. Which of the following is a cubic surd?

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

3. Which of the following is a biquadratic surd?

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

4. Which of the following is a fifth order surd?

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

5. The order of the surd $\frac{1}{15}\sqrt[18]{71}$ is

- (i) $\sqrt[18]{71}$ (ii) 71 (iii) $\frac{1}{18}$ (iv) 18 (v) $\frac{1}{15}$

6. The radicand of the surd $\frac{4}{17}\sqrt[10]{83}$ is

- (i) $\frac{1}{10}$ (ii) $\sqrt[10]{83}$ (iii) 83 (iv) 10 (v) $\frac{4}{17}$

7. The rational factor of the surd $\frac{4}{3}\sqrt[9]{23}$ is

- (i) $\sqrt[9]{23}$ (ii) $\frac{1}{9}$ (iii) 23 (iv) 9 (v) $\frac{4}{3}$

8. The irrational factor of the surd $\frac{7}{3}\sqrt[21]{75}$ is

(i) $\frac{7}{3}$ (ii) 75 (iii) $\frac{1}{21}$ (iv) $\sqrt[21]{75}$ (v) 21

9. Which of the following is a mixed surd?

(i) $(5 + 14\sqrt{2})$ (ii) $\sqrt{20}$

(iii) $(-5\sqrt{6} - 21 + 4\sqrt{8})$ (iv) $(-9\sqrt{5} + 6\sqrt{8})$

(v) 1

10. Which of the following is a pure surd?

(i) 1 (ii) $\sqrt{6}$

(iii) $(1 - \sqrt{2})$ (iv) $(\sqrt{5} + \sqrt{7})$

(v) $(\sqrt{4} - \sqrt{3} + \sqrt{7})$

11. Which of the following is a compound surd?

(i) $(6\sqrt{6} + 6\sqrt{9} + 7\sqrt{5})$ (ii) $\sqrt{20}$

(iii) $4\sqrt{4}$ (iv) (-3)

(v) $(6 + 5\sqrt{6})$

12. Which of the following is a binomial surd?

(i) $(8 - 5\sqrt{5})$ (ii) $\sqrt{32}$

(iii) $(15 + 4\sqrt{6} - 9\sqrt{7})$ (iv) 2

(v) $(-3\sqrt{5} + 9\sqrt{8})$

13. The rationalising factor of $(-6\sqrt{53}) =$

(i) (ii) (iii) (iv) (v)

$$\sqrt{53} \quad 53 \quad \sqrt{50} \quad \sqrt{56} \quad \sqrt[4]{53}$$

14. The rationalising factor of $(-2\sqrt{3} + 4\sqrt{4}) =$

(i) $(-2\sqrt{3} - 8)$ (ii) $(-2\sqrt{\frac{1}{3}} - 8)$ (iii) $(-2\sqrt{3} - 7)$

(iv) $(-2\sqrt{5} - 8)$ (v) $(-2\sqrt{3} - 9)$

15. The pure surd form of $\frac{4}{9}\sqrt{\frac{3}{2}} =$

(i) $\sqrt[4]{\frac{8}{27}}$ (ii) $\sqrt{\frac{10}{27}}$ (iii) $\sqrt{\frac{2}{9}}$ (iv) $\sqrt{\frac{8}{27}}$ (v) $\frac{8}{27}$

16. The pure surd form of $\frac{7}{3}\sqrt{\frac{3}{2}} =$

(i) $\sqrt[3]{\frac{115}{6}}$ (ii) $\sqrt[5]{\frac{343}{18}}$ (iii) $\sqrt[3]{\frac{343}{18}}$ (iv) $\sqrt[3]{\frac{341}{18}}$ (v) $\frac{343}{18}$

17. The mixed surd form of $\sqrt{\frac{29}{6}} =$

(i) $\frac{1}{6}\sqrt{172}$ (ii) 29 (iii) $\frac{1}{6}\sqrt[4]{174}$

(iv) $\frac{1}{6}\sqrt{174}$ (v) $\frac{1}{6}\sqrt{177}$

18. The conjugate of $(17 - 14\sqrt{6}) =$

(i) $(17 + 84)$ (ii) $(17 + 14\sqrt{6})$ (iii) $(19 + 14\sqrt{6})$

(iv) $(17 + 14\sqrt[4]{6})$ (v) $(14 + 14\sqrt{6})$

19. The conjugate of $(-5\sqrt{3} + 3\sqrt{9}) =$

(i) $(-5\sqrt{3} - 9)$ (ii) $(-5\sqrt{6} - 9)$ (iii) $(-5\sqrt{3} - 8)$

(iv) $(-5 - 9)$ (v) $(-5\sqrt{3} - 10)$

20. $\sqrt[4]{\frac{8}{5}}$ =

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

21. $\sqrt[17]{15}$ =

(i) $15^{\left(\frac{2}{17}\right)}$ (ii) $15^{\left(\frac{17}{2}\right)}$ (iii) $17^{\left(\frac{17}{2}\right)}$ (iv) 15^{17} (v) $13^{\left(\frac{17}{2}\right)}$

22. $\sqrt[21]{6}$ =

(i) $6^{\left(\frac{1}{19}\right)}$ (ii) $3^{\left(\frac{1}{21}\right)}$ (iii) 6^{21} (iv) $6^{\left(\frac{1}{21}\right)}$ (v) $8^{\left(\frac{1}{21}\right)}$

23. $16^{\left(\frac{1}{2}\right)}$ =

(i) 16 (ii) $\sqrt[1]{2^{16}}$ (iii) $\sqrt{14}$ (iv) $\sqrt{16}$ (v) $\sqrt{19}$

24. Which of the following lists represent similar surds?

(i) $8\sqrt{24}, 3\sqrt{24}, 10\sqrt{24}, 24\sqrt{24}, 8\sqrt{24}$

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(ii) $8\sqrt{24}$, $3\sqrt{24}$, $10\sqrt{24}$, $2\sqrt{24}$, $8\sqrt{24}$

(iii) $4\sqrt{13}$, $4\sqrt{30}$, $5\sqrt{3}$, $5\sqrt{24}$, $6\sqrt{36}$

(iv) $4\sqrt{30}$, $5\sqrt{3}$, $4\sqrt{13}$, $6\sqrt{36}$, $5\sqrt{24}$

(v) $8\sqrt{24}$, $2\sqrt{27}$, $3\sqrt{24}$, $10\sqrt{24}$, $8\sqrt{24}$

25. Which of the following lists represent dissimilar surds?

(i) $8\sqrt{3}$, $8\sqrt{3}$, $7\sqrt{3}$, $19\sqrt{3}$, $11\sqrt{3}$

(ii) $9\sqrt{6}$, $9\sqrt{6}$, $8\sqrt{6}$, $20\sqrt{6}$, $12\sqrt{6}$

(iii) $4\sqrt{37}$, $\sqrt{14}$, $9\sqrt{3}$, $4\sqrt{23}$, $10\sqrt{33}$

(iv) $8\sqrt{3}$, $8\sqrt{3}$, $7\sqrt{3}$, $19\sqrt{3}$, $11\sqrt{3}$

(v) $7\sqrt{\frac{1}{3}}$, $7\sqrt{\frac{1}{3}}$, $6\sqrt{\frac{1}{3}}$, $18\sqrt{\frac{1}{3}}$, $10\sqrt{\frac{1}{3}}$

26. Which of the following lists represent similar surds?

(i) $3\sqrt{37}$, $6\sqrt{37}$, $8\sqrt{37}$, $4\sqrt{37}$, $4\sqrt{37}$

(ii) $3\sqrt{37}$, $6\sqrt{37}$, $8\sqrt{37}$, $4\sqrt{37}$, $4\sqrt{37}$

(iii) $6\sqrt{39}$, $8\sqrt{37}$, $3\sqrt{37}$, $4\sqrt{37}$, $4\sqrt{37}$

(iv) $9\sqrt{5}$, $7\sqrt{11}$, $3\sqrt{30}$, $7\sqrt{31}$, $5\sqrt{27}$

(v) $3\sqrt{30}$, $5\sqrt{27}$, $7\sqrt{31}$, $9\sqrt{5}$, $7\sqrt{11}$

27. Which of the following lists represent dissimilar surds?

(i) $6\sqrt[3]{33}$, $5\sqrt[3]{33}$, $16\sqrt[3]{33}$, $4\sqrt[3]{33}$, $12\sqrt[3]{33}$

(ii) $5, 4, 15, 3, 11$

(iii) $4\sqrt[3]{27}, 3\sqrt[3]{27}, 14\sqrt[3]{27}, 2\sqrt[3]{27}, 10\sqrt[3]{27}$

(iv) $\sqrt[9]{30}, \sqrt[5]{2}, \sqrt{38}, \sqrt[8]{30}, \sqrt[4]{35}$

(v) $5\sqrt[5]{30}, 4\sqrt[5]{30}, 15\sqrt[5]{30}, 3\sqrt[5]{30}, 11\sqrt[5]{30}$

Assignment Key

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