EduSahara™ Assignment

Name : Rationalising the Denominator

Chapter : Real Numbers

Grade : ICSE Grade VIII

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1. Rationalise the denominator of $\frac{1}{\sqrt{5}}$

(i) 1 (ii) $\frac{1}{5}\sqrt{5}$ (iii) $\frac{1}{5}\sqrt[4]{5}$ (iv) $\frac{1}{5}\sqrt{8}$ (v) $\frac{1}{5}\sqrt{3}$

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

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

3. The rationalising factor of $(-6\sqrt{83}) =$

(i) $\sqrt[4]{83}$ (ii) $\sqrt{81}$ (iii) $\sqrt{86}$ (iv) 83 (v) $\sqrt{83}$

4. The rationalising factor of $(6\sqrt{5}-2\sqrt{6}) =$

(i) $(6\sqrt{5}+12)$ (ii) $(6\sqrt{5}+2\sqrt{6})$ (iii) $(6\sqrt{8}+2\sqrt{6})$ (iv) $(6\sqrt{2}+2\sqrt{6})$ (v) $(6\sqrt{5}+2\sqrt[4]{6})$

5. Rationalise the denominator of $\frac{1}{(9\sqrt{2}+\sqrt{5})}$

(i) $(\frac{9}{157}\sqrt{2}-\frac{5}{157})$ (ii) $(\frac{9}{157}\sqrt{2}-\frac{1}{157}\sqrt[4]{5})$ (iii) $(\frac{9}{157}\sqrt{\frac{1}{2}}-\frac{1}{157}\sqrt{5})$ (iv) $(\frac{9}{157}\sqrt{4}-\frac{1}{157}\sqrt{5})$

(v) $(\frac{9}{157}\sqrt{2}-\frac{1}{157}\sqrt{5})$

6. Rationalise the denominator of $\frac{(-\sqrt{6}-\sqrt{3})}{(\sqrt{2}+\sqrt{9})} =$

(i) $(-\frac{1}{7}\sqrt{3}-\frac{2}{7}\sqrt[4]{6})$ (ii) $(-\frac{1}{7}\sqrt{\frac{1}{3}}-\frac{2}{7}\sqrt{6})$ (iii) $(-\frac{1}{7}\sqrt{3}-\frac{12}{7})$ (iv) $(-\frac{1}{7}\sqrt{3}-\frac{2}{7}\sqrt{6})$ (v) $(-\frac{1}{7}\sqrt{6}-\frac{2}{7}\sqrt{6})$

7. Rationalise the denominator of $\frac{(\sqrt{7}-2\sqrt{9})}{(5\sqrt{4}+4\sqrt{7})} =$

(i) $(-\frac{17}{6}\sqrt{7}+\frac{22}{5})$ (ii) $(-\frac{17}{6}\sqrt{7}+\frac{22}{3})$ (iii) $(-\frac{17}{6}\sqrt{10}+\frac{22}{3})$ (iv) $(-\frac{17}{6}\sqrt{5}+\frac{22}{3})$ (v) $(-\frac{17}{6}\sqrt{7}+22)$

8. Rationalise the denominator of $\frac{1}{(-8\sqrt{2})}$

(i) $(-\frac{1}{16}\sqrt{4})$ (ii) $(-\frac{1}{16}\sqrt{-1})$ (iii) $(-\frac{1}{8})$ (iv) $(-\frac{1}{16}\sqrt{2})$ (v) $(-\frac{1}{16}\sqrt[4]{2})$

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

(i) $(-\frac{1}{3}\sqrt{5}+\frac{2}{3})$ (ii) $(-\frac{1}{3}\sqrt{5}+\frac{1}{3}\sqrt{2})$ (iii) $(-\frac{1}{3}\sqrt{7}+\frac{1}{3}\sqrt{2})$ (iv) $(-\frac{1}{3}\sqrt{3}+\frac{1}{3}\sqrt{2})$ (v) $(-\frac{1}{3}\sqrt{5}+\frac{1}{3}\sqrt[4]{2})$

10. The rationalising factor of $4\sqrt{56}=$

(i) $\sqrt{11}$ (ii) 14 (iii) $\sqrt{14}$ (iv) $\sqrt[4]{14}$ (v) $\sqrt{17}$

11. The rationalising factor of $(14-8\sqrt{6})=$

(i) $(17+8\sqrt{6})$ (ii) $(14+8\sqrt[4]{6})$ (iii) $(14+8\sqrt{6})$ (iv) $(11+8\sqrt{6})$ (v) $(14+48)$

12. Rationalise the denominator of $\frac{1}{(-4\sqrt{5}+6\sqrt{8})}$

(i) $(\frac{1}{52}\sqrt{5}+\frac{3}{52}\sqrt[4]{2})$ (ii) $(\frac{1}{52}\sqrt{3}+\frac{3}{52}\sqrt{2})$ (iii) $(\frac{1}{52}\sqrt{5}+\frac{3}{52}\sqrt{2})$ (iv) $(\frac{1}{52}\sqrt{5}+\frac{3}{26})$ (v) $(\frac{1}{52}\sqrt{7}+\frac{3}{52}\sqrt{2})$

13. Rationalise the denominator of $\frac{(-\sqrt{2}+\sqrt{3})}{(-\sqrt{7}+\sqrt{6})}=$

(i) $(\sqrt{14}-\sqrt{21}+\sqrt{12}-\sqrt{20})$ (ii) $(\sqrt{14}-\sqrt[4]{21}+\sqrt{12}-\sqrt{18})$ (iii) $(\sqrt{14}-\sqrt{21}+\sqrt[4]{12}-\sqrt{18})$

(iv) $(\sqrt{12}-\sqrt{21}+\sqrt{12}-\sqrt{18})$ (v) $(\sqrt{14}-\sqrt{21}+\sqrt{12}-\sqrt{18})$

14. Rationalise the denominator of $\frac{(4\sqrt{8}+5\sqrt{4})}{(\sqrt{7}+2\sqrt{5})}=$

(i) $(-\frac{8}{13}\sqrt{14}-\frac{10}{13}\sqrt{7}+\frac{16}{13}\sqrt[4]{10}+\frac{20}{13}\sqrt{5})$ (ii) $(-\frac{8}{13}\sqrt{14}-\frac{10}{13}\sqrt{7}+\frac{16}{13}\sqrt{10}+\frac{20}{13}\sqrt{8})$

(iii) $(-\frac{8}{13}\sqrt{14}-\frac{10}{13}\sqrt[4]{7}+\frac{16}{13}\sqrt{10}+\frac{20}{13}\sqrt{5})$ (iv) $(-\frac{8}{13}\sqrt{12}-\frac{10}{13}\sqrt{7}+\frac{16}{13}\sqrt{10}+\frac{20}{13}\sqrt{5})$

(v) $(-\frac{8}{13}\sqrt{14}-\frac{10}{13}\sqrt{7}+\frac{16}{13}\sqrt{10}+\frac{20}{13}\sqrt{5})$

Assignment Key

1) (ii)	2) (v)	3) (v)	4) (ii)	5) (v)	6) (iv)
7) (ii)	8) (iv)	9) (ii)	10) (iii)	11) (iii)	12) (iii)
13) (v)	14) (v)				

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