EduSahara™ Assignment

Name : Rationalising the Denominator

Chapter : Number Systems

Grade : CBSE Grade IX

1. Rationalise the denominator of $\frac{1}{9\sqrt{5}}$

(i) $\frac{1}{9}$ (ii) $\frac{1}{45}\sqrt{3}$ (iii) $\frac{1}{45}\sqrt{5}$ (iv) $\frac{1}{45}\sqrt{5}$ (v) $\frac{1}{45}\sqrt{7}$

2. Rationalise the denominator of $\frac{1}{(-\sqrt{4}+\sqrt{7})}$

(i) $(\frac{2}{3}+\frac{1}{3}\sqrt{7})$ (ii) $(\frac{4}{3}+\frac{1}{3}\sqrt{7})$ (iii) $(\frac{2}{3}+\frac{1}{3}\sqrt{7})$ (iv) $(0+\frac{1}{3}\sqrt{7})$ (v) $(\frac{2}{3}+\frac{7}{3})$

3. Rationalise the denominator of $\frac{1}{(9\sqrt{9}+9\sqrt{3})}$

(i) $(\frac{1}{18}-\frac{1}{54}\sqrt{3})$ (ii) $(\frac{1}{6}-\frac{1}{54}\sqrt{3})$ (iii) $(-\frac{1}{18}-\frac{1}{54}\sqrt{3})$ (iv) $(\frac{1}{18}-\frac{1}{54}\sqrt{3})$ (v) $(\frac{1}{18}-\frac{1}{18})$

4. Rationalise the denominator of $\frac{1}{(-\sqrt{4}+\sqrt{5}+\sqrt{3})}$

(i) $(-\frac{4}{11}+\frac{1}{22}\sqrt{5}+\frac{3}{22}\sqrt{3}+\frac{1}{11}\sqrt{15})$ (ii) $(-\frac{2}{11}+\frac{1}{22}\sqrt{5}+\frac{3}{22}\sqrt{3}+\frac{1}{11}\sqrt{17})$

(iii) $(-\frac{2}{11}+\frac{1}{22}\sqrt{5}+\frac{3}{22}\sqrt{3}+\frac{1}{11}\sqrt{15})$ (iv) $(-\frac{2}{11}+\frac{1}{22}\sqrt{5}+\frac{3}{22}\sqrt{3}+\frac{1}{11}\sqrt{15})$

(v) $(-\frac{2}{11}+\frac{1}{22}\sqrt{5}+\frac{3}{22}\sqrt{3}+\frac{1}{11}\sqrt{15})$

5. Rationalise the denominator of $\frac{1}{(8-2\sqrt{2}-2\sqrt{3})}$

(i) $(\frac{22}{97}+\frac{17}{194}\sqrt{2}+\frac{15}{194}\sqrt{3}+\frac{4}{97}\sqrt{6})$ (ii) $(\frac{20}{97}+\frac{17}{194}\sqrt{2}+\frac{15}{194}\sqrt{3}+\frac{4}{97}\sqrt{6})$ (iii) $(\frac{22}{97}+\frac{17}{194}\sqrt{2}+\frac{15}{194}\sqrt{3}+\frac{4}{97}\sqrt{6})$

(iv) $(\frac{22}{97}+\frac{17}{194}\sqrt{2}+\frac{15}{194}\sqrt{3}+\frac{4}{97}\sqrt{8})$ (v) $(\frac{22}{97}+\frac{17}{194}\sqrt{2}+\frac{15}{194}\sqrt{3}+\frac{4}{97}\sqrt{6})$

6. Rationalise the denominator of $\frac{1}{(-\sqrt[3]{3}+\sqrt[3]{5})}$

(i) $(\frac{1}{2}\sqrt[3]{9}+\frac{1}{2}\sqrt[3]{15}+\frac{1}{2}\sqrt[3]{25})$ (ii) $(\frac{1}{2}\sqrt[3]{9}+\frac{1}{2}\sqrt[3]{12}+\frac{1}{2}\sqrt[3]{25})$ (iii) $(\frac{1}{2}\sqrt[3]{9}+\frac{1}{2}\sqrt[3]{18}+\frac{1}{2}\sqrt[3]{25})$ (iv) $(\frac{1}{2}\sqrt[3]{9}+\frac{1}{2}\sqrt[3]{15}+\frac{25}{2})$

(v) $(\frac{1}{2}\sqrt[3]{9}+\frac{1}{2}\sqrt[3]{15}+\frac{1}{2}\sqrt[5]{25})$

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7. $4\sqrt{4} \div 5\sqrt{9} =$

(i) $\frac{2}{5}$ (ii) $\frac{8}{17}$ (iii) $\frac{8}{15}$ (iv) $\frac{8}{13}$ (v) $\frac{2}{3}$

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8. The rationalising factor of $7\sqrt{51} =$

(i) $\sqrt{51}$ (ii) 51 (iii) $\sqrt[4]{51}$ (iv) $\sqrt{49}$ (v) $\sqrt{54}$

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9. The rationalising factor of $(-6\sqrt{8}-7\sqrt{4}) =$

(i) $(-12\sqrt{-1}+14)$ (ii) $(-12\sqrt{2}+13)$ (iii) $(-12\sqrt{2}+15)$ (iv) $(-12\sqrt{2}+14)$ (v) $(-12\sqrt{4}+14)$

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10. Rationalise the denominator of $\frac{(-\sqrt{4}-\sqrt{5})}{(-\sqrt{6}+\sqrt{2})} =$

(i) $(\frac{1}{2}\sqrt{6}+\frac{1}{4}\sqrt{30}+\frac{1}{2}\sqrt{2}+\frac{1}{4}\sqrt{12})$ (ii) $(\frac{1}{2}\sqrt{6}+\frac{1}{4}\sqrt{30}+\frac{1}{2}\sqrt[4]{2}+\frac{1}{4}\sqrt{10})$ (iii) $(\frac{1}{2}\sqrt{6}+\frac{1}{4}\sqrt{30}+\frac{1}{2}\sqrt{2}+\frac{1}{4}\sqrt{10})$

(iv) $(\frac{1}{2}\sqrt{6}+\frac{1}{4}\sqrt[4]{30}+\frac{1}{2}\sqrt{2}+\frac{1}{4}\sqrt{10})$ (v) $(\frac{1}{2}\sqrt{3}+\frac{1}{4}\sqrt{30}+\frac{1}{2}\sqrt{2}+\frac{1}{4}\sqrt{10})$

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11. Rationalise the denominator of $\frac{(2\sqrt{3}-5\sqrt{7})}{(-2\sqrt{5}+\sqrt{2})} =$

(i) $(-\frac{2}{9}\sqrt{15}+\frac{5}{9}\sqrt{35}-\frac{1}{9}\sqrt{6}+\frac{5}{18}\sqrt{16})$ (ii) $(-\frac{2}{9}\sqrt{13}+\frac{5}{9}\sqrt{35}-\frac{1}{9}\sqrt{6}+\frac{5}{18}\sqrt{14})$

(iii) $(-\frac{2}{9}\sqrt{15}+\frac{5}{9}\sqrt{35}-\frac{1}{9}\sqrt{6}+\frac{5}{18}\sqrt{14})$ (iv) $(-\frac{2}{9}\sqrt{15}+\frac{5}{9}\sqrt{35}-\frac{1}{9}\sqrt[4]{6}+\frac{5}{18}\sqrt{14})$

(v) $(-\frac{2}{9}\sqrt{15}+\frac{5}{9}\sqrt[4]{35}-\frac{1}{9}\sqrt{6}+\frac{5}{18}\sqrt{14})$

Assignment Key

1) (iii)	2) (iii)	3) (iv)	4) (iv)	5) (i)	6) (i)
7) (iii)	8) (i)	9) (iv)	10) (iii)	11) (iii)	