EduSahara™ Assignment

Name : Rationalising the Denominator

Chapter : Number Systems

Grade : CBSE Grade IX

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1. Rationalise the denominator of $\frac{1}{4\sqrt{3}}$

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

2. Rationalise the denominator of $\frac{1}{(\sqrt{5}+\sqrt{7})}$

(i) $(-\frac{1}{2}\sqrt{8}+\frac{1}{2}\sqrt{7})$ (ii) $(-\frac{1}{2}\sqrt{3}+\frac{1}{2}\sqrt{7})$ (iii) $(-\frac{1}{2}\sqrt{5}+\frac{1}{2}\sqrt[4]{7})$ (iv) $(-\frac{1}{2}\sqrt{5}+\frac{7}{2})$ (v) $(-\frac{1}{2}\sqrt{5}+\frac{1}{2}\sqrt{7})$

3. Rationalise the denominator of $\frac{1}{(9\sqrt{2}-5\sqrt{3})}$

(i) $(\frac{3}{29}\sqrt{\frac{1}{2}}+\frac{5}{87}\sqrt{3})$ (ii) $(\frac{3}{29}\sqrt{2}+\frac{5}{87}\sqrt[4]{3})$ (iii) $(\frac{3}{29}\sqrt{2}+\frac{5}{87}\sqrt{3})$ (iv) $(\frac{3}{29}\sqrt{5}+\frac{5}{87}\sqrt{3})$ (v) $(\frac{3}{29}\sqrt{2}+\frac{5}{29})$

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

(i) $(-\frac{3}{22}\sqrt{3}-\frac{2}{11}+\frac{1}{22}\sqrt{5}-\frac{1}{11}\sqrt{18})$ (ii) $(-\frac{3}{22}\sqrt{3}-\frac{2}{13}+\frac{1}{22}\sqrt{5}-\frac{1}{11}\sqrt{15})$

(iii) $(-\frac{3}{22}\sqrt{3}-\frac{2}{11}+\frac{1}{22}\sqrt{5}-\frac{1}{11}\sqrt{15})$ (iv) $(-\frac{3}{22}\sqrt{3}-\frac{2}{11}+\frac{1}{22}\sqrt[4]{5}-\frac{1}{11}\sqrt{15})$

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

5. Rationalise the denominator of $\frac{1}{(-\sqrt{4}-2\sqrt{2}+\sqrt{5})}$

(i) $(-\frac{20}{79}-\frac{2}{79}\sqrt{2}+\frac{7}{79}\sqrt{5}-\frac{8}{79}\sqrt{10})$ (ii) $(-\frac{18}{79}-\frac{2}{79}\sqrt{2}+\frac{7}{79}\sqrt[4]{5}-\frac{8}{79}\sqrt{10})$

(iii) $(-\frac{18}{79}-\frac{2}{79}\sqrt{2}+\frac{7}{79}\sqrt{5}-\frac{8}{79}\sqrt{12})$ (iv) $(-\frac{18}{79}-\frac{2}{79}\sqrt{2}+\frac{7}{79}\sqrt{5}-\frac{8}{79}\sqrt{10})$

(v) $(-\frac{18}{79}-\frac{2}{79}\sqrt[4]{2}+\frac{7}{79}\sqrt{5}-\frac{8}{79}\sqrt{10})$

6. Rationalise the denominator of $\frac{1}{(\sqrt[3]{3}-\sqrt[3]{2})}$

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

7. $7\sqrt{7} \div (-4\sqrt{9}) =$

(i) $(-\frac{7}{12}\sqrt[4]{7})$ (ii) $(-\frac{7}{12}\sqrt{4})$ (iii) $(-\frac{49}{12})$ (iv) $(-\frac{7}{12}\sqrt{7})$ (v) $(-\frac{7}{12}\sqrt{10})$

8. The rationalising factor of $(-7\sqrt{74}) =$

(i) $\sqrt{72}$ (ii) $\sqrt{74}$ (iii) 74 (iv) $\sqrt{77}$ (v) $\sqrt[4]{74}$

9. The rationalising factor of $(-7\sqrt{2}-6\sqrt{6}) =$

(i) $(-7\sqrt{2}+36)$ (ii) $(-7\sqrt{2}+6\sqrt[4]{6})$ (iii) $(-7\sqrt{4}+6\sqrt{6})$ (iv) $(-7\sqrt{-1}+6\sqrt{6})$ (v) $(-7\sqrt{2}+6\sqrt{6})$

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

(i) $(-\frac{1}{2}\sqrt{21}+\frac{1}{4}\sqrt{42}-\frac{3}{2}+\frac{1}{4}\sqrt{20})$ (ii) $(-\frac{1}{2}\sqrt{18}+\frac{1}{4}\sqrt{42}-\frac{3}{2}+\frac{1}{4}\sqrt{18})$ (iii) $(-\frac{1}{2}\sqrt{21}+\frac{1}{4}\sqrt{42}-\frac{5}{4}+\frac{1}{4}\sqrt{18})$

(iv) $(-\frac{1}{2}\sqrt{21}+\frac{1}{4}\sqrt{42}-\frac{3}{2}+\frac{1}{4}\sqrt{18})$ (v) $(-\frac{1}{2}\sqrt{21}+\frac{1}{4}\sqrt[4]{42}-\frac{3}{2}+\frac{1}{4}\sqrt{18})$

11. Rationalise the denominator of $\frac{(-3\sqrt{6}-2\sqrt{8})}{(-3\sqrt{2}+\sqrt{5})} =$

(i) $(\frac{9}{13}\sqrt{12}+\frac{26}{15}+\frac{3}{13}\sqrt{30}+\frac{4}{13}\sqrt{10})$ (ii) $(\frac{9}{13}\sqrt{12}+\frac{24}{13}+\frac{3}{13}\sqrt{30}+\frac{4}{13}\sqrt{10})$

(iii) $(\frac{9}{13}\sqrt{10}+\frac{24}{13}+\frac{3}{13}\sqrt{30}+\frac{4}{13}\sqrt{10})$ (iv) $(\frac{9}{13}\sqrt{12}+\frac{24}{13}+\frac{3}{13}\sqrt[4]{30}+\frac{4}{13}\sqrt{10})$

(v) $(\frac{9}{13}\sqrt{12}+\frac{24}{13}+\frac{3}{13}\sqrt{30}+\frac{4}{13}\sqrt{13})$

Assignment Key

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

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