EduSahara™ Assignment

Name : Rationalising the Denominator

Chapter : Real Numbers

Grade : ICSE Grade VIII

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

(i) $(-\frac{1}{27}\sqrt{3})$ (ii) $(-\frac{1}{27}\sqrt[4]{3})$ (iii) $(-\frac{1}{27}\sqrt{5})$ (iv) $(-\frac{1}{27})$ (v) $(-\frac{1}{9})$

2. Rationalise the denominator of $\frac{1}{(-\sqrt{6}-\sqrt{5})}$

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

3. The rationalising factor of $8\sqrt{59}$ =

(i) $\sqrt[4]{59}$ (ii) $\sqrt{59}$ (iii) 59 (iv) $\sqrt{56}$ (v) $\sqrt{62}$

4. The rationalising factor of $(6\sqrt{3}-9\sqrt{2})$ =

(i) $(6\sqrt{3}+18)$ (ii) $(6\sqrt{3}+9\sqrt[4]{2})$ (iii) $(6\sqrt{3}+9\sqrt{2})$ (iv) $(6\sqrt{\frac{1}{3}}+9\sqrt{2})$ (v) $(6\sqrt{5}+9\sqrt{2})$

5. Rationalise the denominator of $\frac{1}{(-2\sqrt{7}+8\sqrt{5})}$

(i) $(\frac{1}{146}\sqrt{5}+\frac{2}{73}\sqrt{5})$ (ii) $(\frac{1}{146}\sqrt{7}+\frac{2}{73}\sqrt[4]{5})$ (iii) $(\frac{1}{146}\sqrt{7}+\frac{10}{73})$ (iv) $(\frac{1}{146}\sqrt{9}+\frac{2}{73}\sqrt{5})$ (v) $(\frac{1}{146}\sqrt{7}+\frac{2}{73}\sqrt{5})$

6. Rationalise the denominator of $\frac{(\sqrt{7}-\sqrt{8})}{(\sqrt{9}+\sqrt{3})}$ =

(i) $(\frac{1}{2}\sqrt{7}-\sqrt{2}-\frac{1}{6}\sqrt[4]{21}+\frac{1}{3}\sqrt{6})$ (ii) $(\frac{1}{2}\sqrt{7}-\sqrt[4]{2}-\frac{1}{6}\sqrt{21}+\frac{1}{3}\sqrt{6})$ (iii) $(\frac{1}{2}\sqrt{7}-\sqrt{2}-\frac{1}{6}\sqrt{21}+\frac{1}{3}\sqrt{6})$

(iv) $(\frac{1}{2}\sqrt{5}-\sqrt{2}-\frac{1}{6}\sqrt{21}+\frac{1}{3}\sqrt{6})$ (v) $(\frac{1}{2}\sqrt{7}-\sqrt{2}-\frac{1}{6}\sqrt{21}+\frac{1}{3}\sqrt{8})$

7. Rationalise the denominator of $\frac{(-2\sqrt{9}-\sqrt{3})}{(-4\sqrt{4}-4\sqrt{5})}$ =

(i) $(-3-\frac{1}{2}\sqrt{3}+\frac{3}{2}\sqrt{5}+\frac{1}{4}\sqrt{15})$ (ii) $(-3-\frac{1}{2}\sqrt{3}+\frac{3}{2}\sqrt{5}+\frac{1}{4}\sqrt{15})$ (iii) $(-3-\frac{1}{2}\sqrt[4]{3}+\frac{3}{2}\sqrt{5}+\frac{1}{4}\sqrt{15})$

(iv) $(-6-\frac{1}{2}\sqrt{3}+\frac{3}{2}\sqrt{5}+\frac{1}{4}\sqrt{15})$ (v) $(-3-\frac{1}{2}\sqrt{3}+\frac{3}{2}\sqrt{5}+\frac{1}{4}\sqrt{17})$

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8. Rationalise the denominator of $\frac{1}{8\sqrt{7}}$

(i) $\frac{1}{56}\sqrt[4]{7}$ (ii) $\frac{1}{8}$ (iii) $\frac{1}{56}\sqrt{4}$ (iv) $\frac{1}{56}\sqrt{10}$ (v) $\frac{1}{56}\sqrt{7}$

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

(i) $(-\frac{1}{2}\sqrt{2}-1)$ (ii) $(-\frac{1}{2}\sqrt{2}-2)$ (iii) $(-\frac{1}{2}\sqrt{5}-1)$ (iv) $(-\frac{1}{2}\sqrt{2}+0)$ (v) $(-\frac{1}{2}\sqrt{\frac{1}{2}}-1)$

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10. The rationalising factor of $(-6\sqrt{79})$ =

(i) $\sqrt{77}$ (ii) $\sqrt[4]{79}$ (iii) $\sqrt{82}$ (iv) $\sqrt{79}$ (v) 79

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11. The rationalising factor of $(-7\sqrt{9}-3\sqrt{5})$ =

(i) $(-21+3\sqrt{5})$ (ii) $(-18+3\sqrt{5})$ (iii) $(-24+3\sqrt{5})$ (iv) $(-21+3\sqrt[4]{5})$ (v) $(-21+15)$

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12. Rationalise the denominator of $\frac{1}{(2\sqrt{6}-7\sqrt{8})}$

(i) $(-\frac{1}{184}\sqrt{4}-\frac{7}{184}\sqrt{2})$ (ii) $(-\frac{1}{184}\sqrt{6}-\frac{7}{92})$ (iii) $(-\frac{1}{184}\sqrt{6}-\frac{7}{184}\sqrt[4]{2})$ (iv) $(-\frac{1}{184}\sqrt{6}-\frac{7}{184}\sqrt{2})$

(v) $(-\frac{1}{184}\sqrt{9}-\frac{7}{184}\sqrt{2})$

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13. Rationalise the denominator of $\frac{(-\sqrt{2}+\sqrt{3})}{(-\sqrt{2}-\sqrt{4})}$ =

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

(v) $(-1+\frac{1}{2}\sqrt{6}+\sqrt{2}-\sqrt{5})$

14. Rationalise the denominator of $\frac{(-2\sqrt{9}-4\sqrt{6})}{(-\sqrt{2}-3\sqrt{6})}$ =

(i) $(-\frac{3}{26}\sqrt{2}-\frac{1}{13}\sqrt[4]{12}+\frac{9}{26}\sqrt{6}+\frac{18}{13})$ (ii) $(-\frac{3}{26}\sqrt{2}-\frac{1}{13}\sqrt{12}+\frac{9}{26}\sqrt{6}+\frac{20}{13})$

(iii) $(-\frac{3}{26}\sqrt{2}-\frac{1}{13}\sqrt{12}+\frac{9}{26}\sqrt[4]{6}+\frac{18}{13})$ (iv) $(-\frac{3}{26}\sqrt{-1}-\frac{1}{13}\sqrt{12}+\frac{9}{26}\sqrt{6}+\frac{18}{13})$

(v) $(-\frac{3}{26}\sqrt{2}-\frac{1}{13}\sqrt{12}+\frac{9}{26}\sqrt{6}+\frac{18}{13})$

Assignment Key

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