

EduSahara™ Learning Center Assignment

Grade : Class IX, SSC

Chapter : Real Numbers

Name : Rationalizing Factor

1. The rationalising factor of $\sqrt{57}$ =

- (i) $\sqrt{57}$ (ii) $\sqrt[4]{57}$ (iii) $\sqrt{60}$ (iv) 57 (v) $\sqrt{54}$

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

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

3. Rationalise the denominator of $\frac{1}{(\sqrt{8} - \sqrt{4})}$

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

4. Rationalise the denominator of $\frac{1}{(8\sqrt{7} - 5\sqrt{6})}$

- (i) $(\frac{4}{149}\sqrt{7} + \frac{5}{298}\sqrt[4]{6})$ (ii) $(\frac{4}{149}\sqrt{5} + \frac{5}{298}\sqrt{6})$ (iii) $(\frac{4}{149}\sqrt{10} + \frac{5}{298}\sqrt{6})$
 (iv) $(\frac{4}{149}\sqrt{7} + \frac{5}{298}\sqrt{6})$ (v) $(\frac{4}{149}\sqrt{7} + \frac{15}{149})$

5. Rationalise the denominator of

1

$$(-\sqrt{4} - \sqrt{2} + \sqrt{3})$$

$$(i) \left(-\frac{4}{23} - \frac{5}{23} \sqrt{2} + \frac{3}{23} \sqrt{3} - \frac{4}{23} \sqrt{6} \right)$$

$$(ii) \left(-\frac{2}{23} - \frac{5}{23} \sqrt{2} + \frac{3}{23} \sqrt{3} - \frac{4}{23} \sqrt{6} \right)$$

$$(iii) \left(-\frac{2}{23} - \frac{5}{23} \sqrt{2} + \frac{3}{23} \sqrt{3} - \frac{4}{23} \sqrt{6} \right)$$

$$(iv) \left(-\frac{2}{23} - \frac{5}{23} \sqrt{2} + \frac{3}{23} \sqrt{3} - \frac{4}{23} \sqrt{6} \right)$$

$$(v) \left(-\frac{2}{23} - \frac{5}{23} \sqrt{2} + \frac{3}{23} \sqrt{3} - \frac{4}{23} \sqrt{9} \right)$$

$$1$$

6. Rationalise the denominator of

$$(3\sqrt{5} - 3\sqrt{4} + 4\sqrt{3})$$

$$(i) \left(\frac{13}{599} \sqrt{5} - \frac{38}{599} + \frac{44}{1797} \sqrt{3} + \frac{16}{599} \sqrt{15} \right)$$

$$(ii) \left(\frac{13}{599} \sqrt{5} - \frac{38}{601} + \frac{44}{1797} \sqrt{3} + \frac{16}{599} \sqrt{15} \right)$$

$$(iii) \left(\frac{13}{599} \sqrt{5} - \frac{38}{599} + \frac{44}{1797} \sqrt{3} + \frac{16}{599} \sqrt{15} \right)$$

$$(iv) \left(\frac{13}{599} \sqrt{2} - \frac{38}{599} + \frac{44}{1797} \sqrt{3} + \frac{16}{599} \sqrt{15} \right)$$

$$(v) \left(\frac{13}{599} \sqrt{5} - \frac{38}{599} + \frac{44}{1797} \sqrt{3} + \frac{16}{599} \sqrt{17} \right)$$

$$1$$

7. Rationalise the denominator of

$$\left(\frac{3}{\sqrt{3}} - \frac{3}{\sqrt{2}} \right)$$

$$(i) \left(\frac{3}{\sqrt{9}} + \frac{3}{\sqrt{4}} + \frac{3}{\sqrt{4}} \right)$$

$$(ii) \left(\frac{3}{\sqrt{9}} + \frac{3}{\sqrt{4}} + \frac{5}{\sqrt{4}} \right)$$

$$\sqrt{3} \quad \sqrt{6} \quad \sqrt{4}$$

$$(iii) \left(\frac{3}{\sqrt{9}} + \frac{3}{\sqrt{6}} + 4 \right)$$

$$(iv) \left(\frac{3}{\sqrt{9}} + \frac{3}{\sqrt{6}} + \frac{3}{\sqrt{4}} \right)$$

$$(v) \left(\frac{3}{\sqrt{9}} + \frac{3}{\sqrt{8}} + \frac{3}{\sqrt{4}} \right)$$

$$(-\sqrt{6} + \sqrt{3})$$

8. Rationalise the denominator of $\frac{(-\sqrt{6} + \sqrt{3})}{(-\sqrt{7} - \sqrt{4})} =$

$$(-\sqrt{7} - \sqrt{4})$$

$$(i) \left(\frac{1}{3} \sqrt{42} - \frac{1}{3} \sqrt{21} - \frac{2}{3} \sqrt{6} + \frac{2}{3} \sqrt{3} \right)$$

$$(ii) \left(\frac{1}{3} \sqrt{39} - \frac{1}{3} \sqrt{21} - \frac{2}{3} \sqrt{6} + \frac{2}{3} \sqrt{3} \right)$$

$$(iii) \left(\frac{1}{3} \sqrt{42} - \frac{1}{3} \sqrt{21} - \frac{2}{3} \sqrt{6} + \frac{2}{3} \sqrt{3} \right)$$

$$(iv) \left(\frac{1}{3} \sqrt{42} - \frac{1}{3} \sqrt{21} - \frac{2}{3} \sqrt{6} + \frac{2}{3} \sqrt{5} \right)$$

$$(v) \left(\frac{1}{3} \sqrt{42} - \frac{1}{3} \sqrt{21} - \frac{2}{3} \sqrt{6} + \frac{2}{3} \sqrt{3} \right)$$

$$(-4\sqrt{9} - 4\sqrt{7})$$

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

$$(\sqrt{2} + 5\sqrt{7})$$

$$(i) \left(\frac{12}{173} \sqrt{2} + \frac{4}{173} \sqrt{14} - \frac{60}{173} \sqrt{7} - \frac{140}{173} \right)$$

$$(ii) \left(\frac{12}{173} \sqrt{2} + \frac{4}{173} \sqrt{14} - \frac{60}{173} \sqrt{7} - \frac{138}{173} \right)$$

$$(iii) \left(\frac{12}{173} \sqrt{2} + \frac{4}{173} \sqrt{14} - \frac{60}{173} \sqrt{7} - \frac{140}{173} \right)$$

$$(iv) \left(\frac{12}{173} \sqrt{2} + \frac{4}{173} \sqrt{14} - \frac{60}{173} \sqrt{7} - \frac{140}{173} \right)$$

$$\frac{1}{\sqrt{2}} + \frac{1}{\sqrt{14}} - \frac{1}{\sqrt{7}} - \frac{1}{\sqrt{13}}$$

$$(v) \left(\frac{12}{173} \sqrt{2} + \frac{4}{173} \sqrt{14} - \frac{60}{173} \sqrt{7} - \frac{140}{173} \right)$$

Assignment Key

- 1) (i)
- 2) (v)
- 3) (ii)
- 4) (iv)
- 5) (iii)
- 6) (i)
- 7) (iv)
- 8) (iii)
- 9) (v)