



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

- (i)  $\frac{1}{7}\sqrt{7}$  (ii)  $\frac{1}{7}\sqrt[4]{7}$  (iii)  $\frac{1}{7}\sqrt{4}$  (iv)  $\frac{1}{7}\sqrt{9}$  (v) 1

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

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

3. The rationalising factor of  $(-9\sqrt{58}) =$

- (i)  $\sqrt{55}$  (ii)  $\sqrt{61}$  (iii)  $\sqrt{58}$  (iv) 58 (v)  $\sqrt[4]{58}$

4. The rationalising factor of  $(-8\sqrt{2}-8\sqrt{9}) =$

- (i)  $(-8\sqrt{2}+25)$  (ii)  $(-8\sqrt{5}+24)$  (iii)  $(-8\sqrt[2]{2}+24)$  (iv)  $(-8\sqrt{2}+23)$  (v)  $(-8\sqrt{2}+24)$

5. Rationalise the denominator of  $\frac{1}{(10\sqrt{2}+\sqrt{3})}$

- (i)  $(\frac{10}{197}\sqrt{2}-\frac{1}{197}\sqrt{3})$  (ii)  $(\frac{10}{197}\sqrt[2]{2}-\frac{1}{197}\sqrt{3})$  (iii)  $(\frac{10}{197}\sqrt{2}-\frac{1}{197}\sqrt[4]{3})$  (iv)  $(\frac{10}{197}\sqrt{4}-\frac{1}{197}\sqrt{3})$

- (v)  $(\frac{10}{197}\sqrt{2}-\frac{3}{197})$

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

- (i)  $(-\frac{1}{3}\sqrt{18}+2+\sqrt[4]{3}-\sqrt{6})$  (ii)  $(-\frac{1}{3}\sqrt{16}+2+\sqrt{3}-\sqrt{6})$  (iii)  $(-\frac{1}{3}\sqrt{18}+2+\sqrt{3}-\sqrt{9})$  (iv)  $(-\frac{1}{3}\sqrt{18}+3+\sqrt{3}-\sqrt{6})$

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

$$(-2\sqrt{6}-2\sqrt{2})$$

7. Rationalise the denominator of  $\frac{\quad}{\quad} =$

$$(-2\sqrt{7}-4\sqrt{4})$$

(i)  $(-\frac{1}{9}\sqrt{42}-\frac{1}{9}\sqrt{14}+\frac{4}{9}\sqrt{6}+\frac{4}{9}\sqrt{2})$  (ii)  $(-\frac{1}{9}\sqrt{39}-\frac{1}{9}\sqrt{14}+\frac{4}{9}\sqrt{6}+\frac{4}{9}\sqrt{2})$  (iii)  $(-\frac{1}{9}\sqrt{42}-\frac{1}{9}\sqrt{14}+\frac{4}{9}\sqrt{6}+\frac{4}{9}\sqrt{4})$

(iv)  $(-\frac{1}{9}\sqrt{42}-\frac{1}{9}\sqrt{14}+\frac{4}{9}\sqrt{6}+\frac{4}{9}\sqrt{2})$  (v)  $(-\frac{1}{9}\sqrt{42}-\frac{1}{9}\sqrt{14}+\frac{4}{9}\sqrt{6}+\frac{4}{9}\sqrt{2})$

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

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

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

(i)  $(\frac{1}{4}\sqrt{8}+\frac{1}{4}\sqrt{2})$  (ii)  $(\frac{1}{4}\sqrt{6}+\frac{1}{4}\sqrt{2})$  (iii)  $(\frac{1}{4}\sqrt{4}+\frac{1}{4}\sqrt{2})$  (iv)  $(\frac{1}{4}\sqrt{6}+\frac{1}{2})$  (v)  $(\frac{1}{4}\sqrt{6}+\frac{1}{4}\sqrt{2})$

10. The rationalising factor of  $(-9\sqrt{34}) =$

(i)  $\sqrt{34}$  (ii)  $\sqrt[4]{34}$  (iii) 34 (iv)  $\sqrt{31}$  (v)  $\sqrt{36}$

11. The rationalising factor of  $(3\sqrt{4}+2\sqrt{2}) =$

(i)  $(6-2\sqrt{2})$  (ii)  $(6-4)$  (iii)  $(4-2\sqrt{2})$  (iv)  $(9-2\sqrt{2})$  (v)  $(6-2\sqrt{2})$

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

(i)  $(\frac{1}{2}\sqrt{2}+\frac{1}{2})$  (ii)  $(\frac{1}{2}\sqrt{2}+1)$  (iii)  $(\frac{1}{2}\sqrt{5}+\frac{1}{2})$  (iv)  $(\frac{1}{2}\sqrt{\frac{1}{2}}+\frac{1}{2})$  (v)  $(\frac{1}{2}\sqrt{2}+\frac{1}{4})$

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

13. Rationalise the denominator of  $\frac{\quad}{\quad} =$

$$(-\sqrt{9}+\sqrt{6})$$

(i)  $(-2-\sqrt{3}-\frac{2}{3}\sqrt{6}-\frac{1}{3}\sqrt{18})$  (ii)  $(-2-\sqrt{3}-\frac{2}{3}\sqrt{6}-\frac{1}{3}\sqrt{20})$  (iii)  $(-2-\sqrt{3}-\frac{2}{3}\sqrt{6}-\frac{1}{3}\sqrt{18})$

(iv)  $(-4-\sqrt{3}-\frac{2}{3}\sqrt{6}-\frac{1}{3}\sqrt{18})$  (v)  $(-2-\sqrt{3}-\frac{2}{3}\sqrt{6}-\frac{1}{3}\sqrt{18})$

$$(-4\sqrt{5}-\sqrt{8})$$

14. Rationalise the denominator of  $\frac{\quad}{(2\sqrt{5}-2\sqrt{2})} =$

$$(2\sqrt{5}-2\sqrt{2})$$

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

## Assignment Key

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