Solutions – Rationalising the Denominator (A)

Simplify $\dfrac{3}{\sqrt{3}}$ by rationalising the denominator.

$\sqrt{3}$

Simplify $\dfrac{-6}{\sqrt{2}}$ by rationalising the denominator.

$-3\sqrt{2}$

Simplify $\dfrac{2+\sqrt{2}}{\sqrt{3}}$ by rationalising the denominator.

$\dfrac{2\sqrt{3}+\sqrt{6}}{3}$

Simplify $\dfrac{-6}{4+\sqrt{10}}$ by rationalising the denominator.

$-4+\sqrt{10}$

Solutions – Rationalising the Denominator (B)

Simplify $\dfrac{-24}{\sqrt{13} + \sqrt{5}}$ by rationalising the denominator.

$3\sqrt{5} - 3\sqrt{13}$

Simplify $\dfrac{4}{\sqrt{5} + \sqrt{3}}$ by rationalising the denominator.

$-2\sqrt{3} + 2\sqrt{5}$

Simplify $\dfrac{-2}{3\sqrt{11}}$ by rationalising the denominator.

$\dfrac{-2\sqrt{11}}{33}$

Simplify $\dfrac{4 + \sqrt{3}}{\sqrt{3}}$ by rationalising the denominator.

$\dfrac{3 + 4\sqrt{3}}{3}$

Solutions – Rationalising the Denominator (C)

Simplify $\dfrac{-5}{4\sqrt{13}}$ by rationalising the denominator.

$\dfrac{-5\sqrt{13}}{52}$

Simplify $\dfrac{3}{2 + \sqrt{3}}$ by rationalising the denominator.

$6 - 3\sqrt{3}$

Simplify $\dfrac{8}{4\sqrt{6}}$ by rationalising the denominator.

$\dfrac{\sqrt{6}}{3}$

Simplify $\dfrac{-\sqrt{7}}{\sqrt{3} + \sqrt{2}}$ by rationalising the denominator.

$\sqrt{14} - \sqrt{21}$

Solutions – Rationalising the Denominator (D)

Simplify $\dfrac{4 + \sqrt{2}}{\sqrt{6}}$ by rationalising the denominator.

$\dfrac{\sqrt{3} + 2\sqrt{6}}{3}$

Simplify $\dfrac{-\sqrt{7}}{\sqrt{11} + \sqrt{3}}$ by rationalising the denominator.

$\dfrac{\sqrt{21} - \sqrt{77}}{8}$

Simplify $\dfrac{-4}{3 + \sqrt{5}}$ by rationalising the denominator.

$-3 + \sqrt{5}$

Simplify $\dfrac{7}{2\sqrt{5}}$ by rationalising the denominator.

$\dfrac{7\sqrt{5}}{10}$

Solutions – Rationalising the Denominator (E)

Simplify $\dfrac{-\sqrt{7}}{\sqrt{5} + \sqrt{3}}$ by rationalising the denominator.

$\dfrac{\sqrt{21} - \sqrt{35}}{2}$

Simplify $\dfrac{-6}{4\sqrt{6}}$ by rationalising the denominator.

$\dfrac{-\sqrt{6}}{4}$

Simplify $\dfrac{9}{4 + \sqrt{13}}$ by rationalising the denominator.

$12 - 3\sqrt{13}$

Simplify $\dfrac{6}{4\sqrt{11}}$ by rationalising the denominator.

$\dfrac{3\sqrt{11}}{22}$

Solutions – Rationalising the Denominator (F)

Simplify $\dfrac{-\sqrt{2}}{\sqrt{11} + \sqrt{3}}$ by rationalising the denominator.

$\dfrac{\sqrt{6} - \sqrt{22}}{8}$

Simplify $\dfrac{8}{\sqrt{5} + \sqrt{3}}$ by rationalising the denominator.

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

Simplify $\dfrac{5 + \sqrt{11}}{\sqrt{13}}$ by rationalising the denominator.

$\dfrac{5\sqrt{13} + \sqrt{143}}{13}$

Simplify $\dfrac{-2}{\sqrt{3}}$ by rationalising the denominator.

$\dfrac{-2\sqrt{3}}{3}$

Solutions – Rationalising the Denominator (G)

Simplify $\dfrac{3}{\sqrt{2}}$ by rationalising the denominator.

$\dfrac{3\sqrt{2}}{2}$

Simplify $\dfrac{5}{\sqrt{2}}$ by rationalising the denominator.

$\dfrac{5\sqrt{2}}{2}$

Simplify $\dfrac{-6}{3 + \sqrt{7}}$ by rationalising the denominator.

$-9 + 3\sqrt{7}$

Simplify $\dfrac{-2 - \sqrt{7}}{\sqrt{6}}$ by rationalising the denominator.

$\dfrac{-2\sqrt{6} - \sqrt{42}}{6}$

Solutions – Rationalising the Denominator (H)

Simplify $\dfrac{3}{\sqrt{3}}$ by rationalising the denominator.

$\sqrt{3}$

Simplify $\dfrac{-\sqrt{11}}{\sqrt{5}+\sqrt{3}}$ by rationalising the denominator.

$\dfrac{\sqrt{33}-\sqrt{55}}{2}$

Simplify $\dfrac{-3-\sqrt{5}}{\sqrt{13}}$ by rationalising the denominator.

$\dfrac{-3\sqrt{13}-\sqrt{65}}{13}$

Simplify $\dfrac{1}{\sqrt{6}+\sqrt{5}}$ by rationalising the denominator.

$-\sqrt{5}+\sqrt{6}$

Solutions – Rationalising the Denominator (I)

Simplify $\dfrac{7}{\sqrt{2}}$ by rationalising the denominator.

$\dfrac{7\sqrt{2}}{2}$

Simplify $\dfrac{\sqrt{6}}{\sqrt{10}+\sqrt{6}}$ by rationalising the denominator.

$\dfrac{-3+\sqrt{15}}{2}$

Simplify $\dfrac{-6}{\sqrt{13}}$ by rationalising the denominator.

$\dfrac{-6\sqrt{13}}{13}$

Simplify $\dfrac{-2}{\sqrt{5}+\sqrt{3}}$ by rationalising the denominator.

$\sqrt{3}-\sqrt{5}$

Solutions – Rationalising the Denominator (J)

Simplify $\dfrac{-5}{\sqrt{6}}$ by rationalising the denominator.

$\dfrac{-5\sqrt{6}}{6}$

Simplify $\dfrac{4}{\sqrt{3} + \sqrt{2}}$ by rationalising the denominator.

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

Simplify $\dfrac{18}{4 + \sqrt{10}}$ by rationalising the denominator.

$12 - 3\sqrt{10}$

Simplify $\dfrac{-\sqrt{13}}{\sqrt{13} + \sqrt{5}}$ by rationalising the denominator.

$\dfrac{-13 + \sqrt{65}}{8}$