Rationalising the Denominator

1. Express each fraction with a **rational denominator** in its simplest form.

(a) $\frac{1}{\sqrt{2}}$ (b) $\frac{1}{\sqrt{5}}$ (c) $\frac{1}{\sqrt{3}}$ (d) $\frac{1}{\sqrt{6}}$ (e) $\frac{2}{\sqrt{7}}$ (f) $\frac{3}{\sqrt{5}}$

(g) $\frac{2}{\sqrt{3}}$ (h) $\frac{7}{\sqrt{10}}$ (i) $\frac{1}{\sqrt{11}}$ (j) $\frac{3}{\sqrt{6}}$ (k) $\frac{5}{\sqrt{10}}$ (l) $\frac{6}{\sqrt{2}}$

(m) $\frac{3}{\sqrt{3}}$ (n) $\frac{8}{\sqrt{2}}$ (o) $\frac{9}{\sqrt{3}}$ (p) $\frac{7}{\sqrt{7}}$ (q) $\frac{20}{\sqrt{5}}$ (r) $\frac{4}{\sqrt{6}}$

(s) $\frac{6}{\sqrt{15}}$ (t) $\frac{8}{\sqrt{10}}$ (u) $\frac{9}{\sqrt{6}}$ (v) $\frac{70}{\sqrt{7}}$ (w) $\frac{10}{\sqrt{2}}$ (x) $\frac{12}{\sqrt{3}}$

2. Express each fraction with a **rational denominator** in its simplest form.

(a) $\frac{1}{2\sqrt{2}}$ (b) $\frac{1}{4\sqrt{3}}$ (c) $\frac{1}{5\sqrt{5}}$ (d) $\frac{1}{3\sqrt{2}}$ (e) $\frac{1}{5\sqrt{3}}$ (f) $\frac{1}{2\sqrt{11}}$

(g) $\frac{4}{5\sqrt{2}}$ (h) $\frac{5}{2\sqrt{10}}$ (i) $\frac{8}{3\sqrt{2}}$ (j) $\frac{2}{3\sqrt{10}}$ (k) $\frac{7}{6\sqrt{3}}$ (l) $\frac{2}{3\sqrt{6}}$

ANSWERS

1. (a) $\frac{\sqrt{2}}{2}$ (b) $\frac{\sqrt{5}}{5}$ (c) $\frac{\sqrt{3}}{3}$ (d) $\frac{\sqrt{6}}{6}$ (e) $\frac{2\sqrt{7}}{7}$ (f) $\frac{3\sqrt{5}}{5}$

(g) $\frac{2\sqrt{3}}{3}$ (h) $\frac{7\sqrt{10}}{10}$ (i) $\frac{\sqrt{11}}{11}$ (j) $\frac{\sqrt{6}}{2}$ (k) $\frac{\sqrt{10}}{2}$ (l) $3\sqrt{2}$

(m) $\sqrt{3}$ (n) $4\sqrt{2}$ (o) $3\sqrt{3}$ (p) $\sqrt{7}$ (q) $4\sqrt{5}$ (r) $\frac{2\sqrt{6}}{3}$

(s) $\frac{2\sqrt{15}}{5}$ (t) $\frac{4\sqrt{10}}{5}$ (u) $\frac{3\sqrt{6}}{2}$ (v) $10\sqrt{7}$ (w) $5\sqrt{2}$ (x) $4\sqrt{3}$

2. (a) $\frac{\sqrt{2}}{4}$ (b) $\frac{\sqrt{3}}{12}$ (c) $\frac{\sqrt{5}}{25}$ (d) $\frac{\sqrt{2}}{6}$ (e) $\frac{\sqrt{3}}{15}$ (f) $\frac{\sqrt{11}}{22}$

(g) $\frac{2\sqrt{2}}{5}$ (h) $\frac{\sqrt{10}}{4}$ (i) $\frac{4\sqrt{2}}{3}$ (j) $\frac{\sqrt{10}}{15}$ (k) $\frac{7\sqrt{3}}{18}$ (l) $\frac{\sqrt{6}}{9}$