Rationalizing Denominators

Level 1 - Rationalize the monomial denominator of an expression
Level 2 - Rationalize the binomial denominator of an expression
Level 3 - Rationalize the binomial denominator containing variables

Answers:

Level 1

a) $\sqrt{3}$	b) $\frac{-\sqrt{2}}{2}$	c) $\frac{4\sqrt{6}}{3}$
d) $\frac{\sqrt{10}}{2}$	e) $1+\sqrt{2}$	f) $\frac{-3+2\sqrt{3}}{3}$
g) $\frac{2\sqrt{2}-\sqrt{10}}{8}$	h) $\frac{3-2\sqrt{3}}{6}$	i) $\frac{\sqrt{35}+10\sqrt{7}}{35}$
j) $\frac{\sqrt{30}-2\sqrt{6}}{12}$	k) $\frac{-3+\sqrt{6}}{3}$	l) $\frac{-7+4\sqrt{2}}{2}$

Level 2

a) $\frac{3+\sqrt{5}}{2}$	b) $\frac{20+5\sqrt{2}}{14}$	c) $\frac{-6+3\sqrt{2}}{2}$
d) $\frac{-\sqrt{6}+\sqrt{15}}{3}$	e) $15+6\sqrt{5}$	f) $\frac{-12\sqrt{3}-16\sqrt{6}}{23}$
g) $\frac{-18-3\sqrt{3}}{11}$	h) $-3+2\sqrt{2}$	i) $\frac{-5+2\sqrt{5}}{15}$
j) $-\sqrt{3}$	k) $\frac{\sqrt{2}}{2}$	l) $\frac{3-\sqrt{5}}{2}$

Level 3

a) $\frac{p^2-2p\sqrt{q}+q}{p^2-q}$	b) $\frac{m\sqrt{mn}+2m\sqrt{n}+n\sqrt{m}}{m-n}$	c) $\sqrt{x}-\sqrt{y}$
d) $\sqrt{x}$	e) $\frac{m\sqrt{n}+n\sqrt{m}}{m-n}$	f) $\frac{p\sqrt{q}+q\sqrt{p}}{p^2}$