

1. Answer each of the following questions, showing all working.

- (a) Write $\sqrt{180}$ in simplest form.
- (b) Expand and simplify $(\sqrt{6} + \sqrt{8})(\sqrt{4} - \sqrt{6})$.
- (c) Find x if $\sqrt{45} = x\sqrt{5}$
- (d) Find x if $\sqrt{5x} = 2\sqrt{10}$
- (e) Solve $|-5x + 4| = 4$.
- (f) Let $y = 2$. Find x if $y = 3x + 5$.
- (g) Find x if $5x + 6 = 6$.
- (h) Find x if $\frac{4x}{3} + 9 = 8$.
- (i) Find x if $\frac{-2}{-3x} - 2 = -3$.
- (j) Find x if $x = \frac{0}{4} + \frac{-1}{-4}$
- (k) Find x if $x = \frac{0}{4} \div \frac{-4}{5}$.

2. Answer each of the following questions, showing all working.

- (a) Write $\sqrt{45}$ in simplest form.
- (b) Expand and simplify $(\sqrt{2} + \sqrt{4})(\sqrt{3} - \sqrt{2})$.
- (c) Find x if $\sqrt{80} = x\sqrt{5}$
- (d) Find x if $\sqrt{8x} = 4\sqrt{3}$
- (e) Solve $|-2x + 5| = 3$.
- (f) Let $y = -3$. Find x if $y = 3x + 3$.
- (g) Find x if $2x + 6 = 3$.
- (h) Find x if $\frac{4x}{3} - 3 = 8$.
- (i) Find x if $\frac{-4}{-3x} + 6 = 1$.
- (j) Find x if $x = \frac{-1}{1} + \frac{3}{4}$
- (k) Find x if $x = \frac{-1}{-1} \times \frac{2}{3}$.

3. Answer each of the following questions, showing all working.

- (a) Write $\sqrt{48}$ in simplest form.
- (b) Expand and simplify $(\sqrt{2} + \sqrt{2})(\sqrt{8} - \sqrt{3})$.
- (c) Find x if $\sqrt{96} = x\sqrt{6}$
- (d) Find x if $\sqrt{24x} = 4\sqrt{3}$
- (e) Solve $|-3x + 5| = 3$.
- (f) Let $y = 3$. Find x if $y = 5x - 4$.
- (g) Find x if $2x + 4 = 5$.
- (h) Find x if $\frac{-x}{-4} - 9 = 5$.
- (i) Find x if $\frac{4}{3x} - 6 = 7$.
- (j) Find x if $x = \frac{-2}{2} - \frac{-1}{1}$
- (k) Find x if $x = \frac{5}{-4} \div \frac{-2}{-2}$.

4. Answer each of the following questions, showing all working.

- (a) Write $\sqrt{120}$ in simplest form.
- (b) Expand and simplify $(\sqrt{3} + \sqrt{2})(\sqrt{2} - \sqrt{6})$.
- (c) Find x if $\sqrt{125} = x\sqrt{5}$
- (d) Find x if $\sqrt{2x} = 4\sqrt{3}$
- (e) Solve $|-4x + 5| = 3$.
- (f) Let $y = -1$. Find x if $y = 3x + 0$.
- (g) Find x if $5x + 6 = 3$.
- (h) Find x if $\frac{2x}{-2} - 9 = -7$.
- (i) Find x if $\frac{3}{-2x} - 1 = -2$.
- (j) Find x if $x = \frac{3}{2} - \frac{-3}{-2}$
- (k) Find x if $x = \frac{-1}{-5} \div \frac{-3}{-4}$.

5. Answer each of the following questions, showing all working.

- (a) Write $\sqrt{72}$ in simplest form.
- (b) Expand and simplify $(\sqrt{4} + \sqrt{3})(\sqrt{4} - \sqrt{6})$.
- (c) Find x if $\sqrt{32} = x\sqrt{2}$
- (d) Find x if $\sqrt{3x} = 2\sqrt{6}$
- (e) Solve $|-4x + 5| = 1$.
- (f) Let $y = -2$. Find x if $y = 4x + 4$.
- (g) Find x if $3x + 5 = 3$.
- (h) Find x if $\frac{3x}{-3} - 9 = -10$.
- (i) Find x if $\frac{2}{-3x} - 6 = -2$.
- (j) Find x if $x = \frac{-3}{-3} - \frac{-4}{3}$
- (k) Find x if $x = \frac{-3}{-1} \div \frac{2}{5}$.