

## Exercise 1E

$$1 \text{ c) } \sqrt{50} = \sqrt{25 \times 2} = \sqrt{25} \times \sqrt{2} = 5\sqrt{2}$$

$$f) \frac{\sqrt{12}}{2} = \frac{\sqrt{4 \times 3}}{2} = \frac{2\sqrt{3}}{2} = \sqrt{3}$$

$$\begin{aligned} i) \quad & \sqrt{200} + \sqrt{18} - \sqrt{72} \\ &= \sqrt{100 \times 2} + \sqrt{9 \times 2} - \sqrt{36 \times 2} \\ &= 10\sqrt{2} + 3\sqrt{2} - 6\sqrt{2} \\ &= 7\sqrt{2} \end{aligned}$$

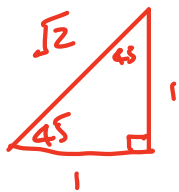
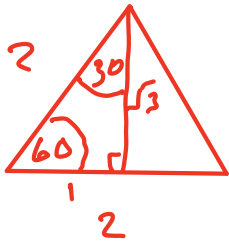
$$\begin{aligned} e) \quad & \sqrt{80} - 2\sqrt{20} + 3\sqrt{45} \\ & \sqrt{16 \times 5} - 2\sqrt{4 \times 5} + 3\sqrt{9 \times 5} \\ & 4\sqrt{5} - 4\sqrt{5} + 9\sqrt{5} = 9\sqrt{5} \end{aligned}$$

$$\begin{aligned} g) \quad & \sqrt{12} + 3\sqrt{48} + \sqrt{75} \\ & \sqrt{4 \times 3} + 3\sqrt{16 \times 3} + \sqrt{25 \times 3} \\ & 2\sqrt{3} + 12\sqrt{3} + 5\sqrt{3} = 19\sqrt{3} \end{aligned}$$

$$2 \text{ c) } \sqrt{2} (4 - \sqrt{5}) = 4\sqrt{2} - \sqrt{10}$$

$$\begin{aligned}
 f) \quad & (4 + \sqrt{5})(2 + \sqrt{5}) \\
 & = 8 + 2\sqrt{5} + 4\sqrt{5} + 5 \\
 & = 13 + 6\sqrt{5}
 \end{aligned}$$

$$\begin{aligned}
 i) \quad & (-7 - \sqrt{11})(2 + \sqrt{11}) \\
 & = 14 - 2\sqrt{11} + 7\sqrt{11} - 11 \\
 & = 3 + 5\sqrt{11}
 \end{aligned}$$



	$0^\circ$	$30^\circ$	$45^\circ$	$60^\circ$	$90^\circ$
sin	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
cos	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
tan	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	$\infty$

$$\begin{aligned}
 \sqrt{2} & \approx 1.414 \\
 \sqrt{3} & \approx 1.732
 \end{aligned}$$

Exercise 1F

$$1 d) \quad \frac{\sqrt{3}}{\sqrt{15}} = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5}$$

$$1 h) \quad \frac{\sqrt{7}}{\sqrt{63}} = \sqrt{\frac{1}{9}} = \frac{1}{3}$$

$$1 c) \quad \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$1 g) \quad \frac{\sqrt{12}}{\sqrt{156}} = \sqrt{\frac{1}{13}} = \frac{1}{\sqrt{13}} \times \frac{\sqrt{13}}{\sqrt{13}} = \frac{\sqrt{13}}{13}$$

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$$\begin{aligned} 2 d) \quad \frac{4}{3-\sqrt{5}} &= \frac{4}{3-\sqrt{5}} \times \frac{3+\sqrt{5}}{3+\sqrt{5}} \\ &= \frac{4(3+\sqrt{5})}{3^2 - \sqrt{5}^2} = \frac{4(3+\sqrt{5})}{9-5} \\ &= \frac{4(3+\sqrt{5})}{4} \\ &= \underline{\underline{3+\sqrt{5}}} \end{aligned}$$

### Homework

Choose an assortment of questions  
from Exercises 1E and 1F

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