

### Try it 1A

$$\begin{aligned} 1a \quad 5x^3 \times 2x^7 &= 5 \times 2 \times x^{3+7} \\ &= 10x^{10} \end{aligned}$$

$$\begin{aligned} 1b \quad 18x^9 \div 3x^2 &= \frac{18x^9}{3x^2} \\ &= \frac{18}{3}x^{9-2} \\ &= 6x^7 \end{aligned}$$

$$\begin{aligned} 1c \quad (2x^6)^4 &= 2^4 \times x^{6 \times 4} \\ &= 2 \times 2 \times 2 \times 2 \times x^{6 \times 4} \\ &= 16x^{24} \end{aligned}$$

$$\begin{aligned} 1d \quad \left(\frac{x^3}{3}\right)^2 &= \frac{x^{3 \times 2}}{3^2} \\ &= \frac{x^6}{9} \end{aligned}$$

$$\begin{aligned} 2a \quad 36^{\frac{1}{2}} &= \sqrt{36} \\ &= 6 \end{aligned}$$

$$\begin{aligned} 2b \quad 27^{\frac{2}{3}} &= \left(27^{\frac{1}{3}}\right)^2 \\ &= \left(\sqrt[3]{27}\right)^2 \\ &= 3^2 \\ &= 9 \end{aligned}$$

$$\begin{aligned} 2c \quad 64^{-0.5} &= (64^{-1})^{\frac{1}{2}} \\ &= \frac{1}{64^{\frac{1}{2}}} \\ &= \frac{1}{\sqrt{64}} \\ &= \frac{1}{8} \end{aligned}$$

$$\begin{aligned} 2d \quad \left(\frac{1}{2}\right)^4 &= \frac{1}{2^4} \\ &= \frac{1}{2 \times 2 \times 2 \times 2} \\ &= \frac{1}{16} \end{aligned}$$

$$\begin{aligned} 3a \quad \sqrt[5]{x^2} &= (x^2)^{\frac{1}{5}} \\ &= x^{\frac{2}{5}} \end{aligned}$$

$$\begin{aligned} 3b \quad \frac{3}{\sqrt{x}} &= \frac{3}{x^{\frac{1}{2}}} \\ &= 3x^{-\frac{1}{2}} \end{aligned}$$

$$\begin{aligned} 3c \quad \frac{3x^2}{\sqrt{x}} &= 3 \times \frac{x^2}{x^{\frac{1}{2}}} \\ &= 3 \times x^2 x^{-\frac{1}{2}} \\ &= 3 \times x^{2-\frac{1}{2}} \end{aligned}$$

$$\begin{aligned} &= 3x^{\frac{3}{2}} \\ 3d \quad \frac{\sqrt{x}}{3x} &= \frac{x^{\frac{1}{2}}}{3x} \\ &= \frac{x^{\frac{1}{2}}}{3x^1} \\ &= \frac{1}{3}x^{\frac{1}{2}-1} \\ &= \frac{1}{3}x^{-\frac{1}{2}} \end{aligned}$$

$$\begin{aligned} 4a \quad \sqrt{28} &= \sqrt{4} \sqrt{7} \\ &= 2\sqrt{7} \\ \text{so } 3\sqrt{28} &= 6\sqrt{7} \\ \text{So } 3\sqrt{28} - \sqrt{7} &= 6\sqrt{7} - \sqrt{7} \\ &= 5\sqrt{7} \end{aligned}$$

$$\begin{aligned} 4b \quad \frac{4}{\sqrt{3}} &= \frac{4\sqrt{3}}{\sqrt{3}\sqrt{3}} \\ &= \frac{4\sqrt{3}}{3} \end{aligned}$$

$$\begin{aligned} 4c \quad \frac{3}{1+\sqrt{2}} &= \frac{3(1-\sqrt{2})}{(1+\sqrt{2})(1-\sqrt{2})} \\ &= \frac{3(1-\sqrt{2})}{1-\sqrt{2}+\sqrt{2}-2} \\ &= \frac{3(1-\sqrt{2})}{-1} \\ &= -3+3\sqrt{2} \end{aligned}$$

$$\begin{aligned}
 \mathbf{4d} \quad \frac{\sqrt{5}}{\sqrt{5}-2} &= \frac{\sqrt{5}(\sqrt{5}+2)}{(\sqrt{5}-2)(\sqrt{5}+2)} \\
 &= \frac{5+2\sqrt{5}}{5+2\sqrt{5}-2\sqrt{5}-4} \\
 &= \frac{5+2\sqrt{5}}{5-4} \\
 &= 5+2\sqrt{5}
 \end{aligned}$$

### Bridging Exercise 1A

$$\mathbf{1a} \quad 49^{\frac{1}{2}} = \sqrt{49} \\
 = 7$$

$$\mathbf{1b} \quad 27^{\frac{1}{3}} = \sqrt[3]{27} \\
 = 3$$

$$\mathbf{1c} \quad 5^{-1} = \frac{1}{5}$$

$$\begin{aligned}
 \mathbf{1d} \quad 64^{-\frac{1}{3}} &= \frac{1}{64^{\frac{1}{3}}} \\
 &= \frac{1}{\sqrt[3]{64}} \\
 &= \frac{1}{4}
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{1e} \quad 9^{\frac{3}{2}} &= \left(9^{\frac{1}{2}}\right)^3 \\
 &= (\sqrt{9})^3 \\
 &= 3^3 \\
 &= 27
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{1f} \quad 16^{\frac{3}{4}} &= \left(16^{\frac{1}{4}}\right)^3 \\
 &= (\sqrt[4]{16})^3 \\
 &= 2^3 \\
 &= 8
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{1g} \quad 125^{-\frac{2}{3}} &= \frac{1}{\left(125^{\frac{1}{3}}\right)^2} \\
 &= \frac{1}{(\sqrt[3]{125})^2} \\
 &= \frac{1}{5^2} \\
 &= \frac{1}{25}
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{1h} \quad \left(\frac{1}{2}\right)^3 &= \frac{1^3}{2^3} \\
 &= \frac{1}{8}
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{1i} \quad \left(\frac{1}{9}\right)^{-2} &= 9^2 \\
 &= 81
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{1j} \quad \left(\frac{4}{9}\right)^{\frac{1}{2}} &= \frac{4^{\frac{1}{2}}}{9^{\frac{1}{2}}} \\
 &= \frac{\sqrt{4}}{\sqrt{9}} \\
 &= \frac{2}{3}
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{1k} \quad \left(\frac{9}{16}\right)^{-0.5} &= \left(\frac{16}{9}\right)^{0.5} \\
 &= \frac{16^{0.5}}{9^{0.5}} \\
 &= \frac{\sqrt{16}}{\sqrt{9}} \\
 &= \frac{4}{3}
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{1l} \quad \left(\frac{27}{8}\right)^{-\frac{2}{3}} &= \left(\frac{8}{27}\right)^{\frac{2}{3}} \\
 &= \left(\sqrt[3]{\frac{8}{27}}\right)^2 \\
 &= \left(\frac{\sqrt[3]{8}}{\sqrt[3]{27}}\right)^2 \\
 &= \left(\frac{2}{3}\right)^2 \\
 &= \frac{2^2}{3^2} \\
 &= \frac{4}{9}
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{2a} \quad \sqrt{8} &= \sqrt{4}\sqrt{2} \\
 &= 2\sqrt{2}
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{2b} \quad \sqrt{75} &= \sqrt{25}\sqrt{3} \\
 &= 5\sqrt{3}
 \end{aligned}$$

$$\begin{aligned}
 \mathbf{2c} \quad 2\sqrt{24} &= 2\sqrt{4}\sqrt{6} \\
 &= 2 \times 2\sqrt{6} \\
 &= 4\sqrt{6}
 \end{aligned}$$

$$\begin{aligned} 2d \quad 3\sqrt{48} &= 3\sqrt{16}\sqrt{3} \\ &= 3 \times 4\sqrt{3} \\ &= 12\sqrt{3} \end{aligned}$$

$$\begin{aligned} 2e \quad \sqrt{20} + \sqrt{5} &= \sqrt{4}\sqrt{5} + \sqrt{5} \\ &= 2\sqrt{5} + \sqrt{5} \\ &= 3\sqrt{5} \end{aligned}$$

$$\begin{aligned} 2f \quad \sqrt{27} - \sqrt{12} &= \sqrt{9}\sqrt{3} - \sqrt{4}\sqrt{3} \\ &= 3\sqrt{3} - 2\sqrt{3} \\ &= \sqrt{3} \end{aligned}$$

$$\begin{aligned} 2g \quad 5\sqrt{32} - 3\sqrt{8} &= 5\sqrt{16}\sqrt{2} - 3\sqrt{4}\sqrt{2} \\ &= 5 \times 4\sqrt{2} - 3 \times 2\sqrt{2} \\ &= 20\sqrt{2} - 6\sqrt{2} \\ &= 14\sqrt{2} \end{aligned}$$

$$\begin{aligned} 2h \quad \sqrt{50} + 3\sqrt{125} &= \sqrt{25}\sqrt{2} + 3\sqrt{25}\sqrt{5} \\ &= 5\sqrt{2} + 15\sqrt{5} \end{aligned}$$

$$\begin{aligned} 2i \quad \sqrt{68} + 3\sqrt{17} &= \sqrt{4}\sqrt{17} + 3\sqrt{17} \\ &= 2\sqrt{17} + 3\sqrt{17} \\ &= 5\sqrt{17} \end{aligned}$$

$$\begin{aligned} 2j \quad 3\sqrt{72} - \sqrt{32} &= 3\sqrt{36}\sqrt{2} - \sqrt{16}\sqrt{2} \\ &= 3 \times 6\sqrt{2} - 4\sqrt{2} \\ &= 18\sqrt{2} - 4\sqrt{2} \\ &= 14\sqrt{2} \end{aligned}$$

$$\begin{aligned} 2k \quad 4\sqrt{18} - 2\sqrt{3} &= 4\sqrt{9}\sqrt{2} - 2\sqrt{3} \\ &= 4 \times 3\sqrt{2} - 2\sqrt{3} \\ &= 12\sqrt{2} - 2\sqrt{3} \end{aligned}$$

$$\begin{aligned} 2l \quad 6\sqrt{5} + \sqrt{50} &= 6\sqrt{5} + \sqrt{25}\sqrt{2} \\ &= 6\sqrt{5} + 5\sqrt{2} \end{aligned}$$

$$\begin{aligned} 3a \quad \frac{1}{\sqrt{7}} &= \frac{\sqrt{7}}{\sqrt{7}\sqrt{7}} \\ &= \frac{\sqrt{7}}{7} \end{aligned}$$

$$\begin{aligned} 3b \quad \frac{2}{\sqrt{8}} &= \frac{2}{\sqrt{4}\sqrt{2}} \\ &= \frac{2}{2\sqrt{2}} \\ &= \frac{2\sqrt{2}}{2\sqrt{2}\sqrt{2}} \\ &= \frac{\sqrt{2}}{2} \end{aligned}$$

$$\begin{aligned} 3c \quad \frac{12}{\sqrt{3}} &= \frac{12\sqrt{3}}{\sqrt{3}\sqrt{3}} \\ &= \frac{12\sqrt{3}}{3} \\ &= 4\sqrt{3} \end{aligned}$$

$$\begin{aligned} 3d \quad \frac{\sqrt{8}}{\sqrt{12}} &= \frac{\sqrt{4}\sqrt{2}}{\sqrt{4}\sqrt{3}} \\ &= \frac{2\sqrt{2}}{2\sqrt{3}} \\ &= \frac{\sqrt{2}}{\sqrt{3}} \\ &= \frac{\sqrt{2}\sqrt{3}}{\sqrt{3}\sqrt{3}} \\ &= \frac{\sqrt{6}}{3} \end{aligned}$$

$$\begin{aligned} 3e \quad \frac{1}{1+\sqrt{3}} &= \frac{1-\sqrt{3}}{(1+\sqrt{3})(1-\sqrt{3})} \\ &= \frac{1-\sqrt{3}}{1-\sqrt{3}+\sqrt{3}-3} \\ &= \frac{1-\sqrt{3}}{-2} \\ &= \frac{1}{2}(\sqrt{3}-1) \end{aligned}$$

$$\begin{aligned} 3f \quad \frac{2}{1+\sqrt{2}} &= \frac{2(1-\sqrt{2})}{(1+\sqrt{2})(1-\sqrt{2})} \\ &= \frac{2(1-\sqrt{2})}{1-\sqrt{2}+\sqrt{2}-2} \\ &= \frac{2(1-\sqrt{2})}{-1} \\ &= -2(1-\sqrt{2}) \\ &= 2(\sqrt{2}-1) \end{aligned}$$

$$\begin{aligned} 3g \quad \frac{8}{1-\sqrt{5}} &= \frac{8(1+\sqrt{5})}{(1-\sqrt{5})(1+\sqrt{5})} \\ &= \frac{8(1+\sqrt{5})}{1+\sqrt{5}-\sqrt{5}-5} \\ &= \frac{8(1+\sqrt{5})}{-4} \\ &= -2(1+\sqrt{5}) \end{aligned}$$

$$\begin{aligned}
 3h \quad \frac{2}{\sqrt{5}-1} &= \frac{2(\sqrt{5}+1)}{(\sqrt{5}-1)(\sqrt{5}+1)} \\
 &= \frac{2(\sqrt{5}+1)}{5+\sqrt{5}-\sqrt{5}-1} \\
 &= \frac{2(\sqrt{5}+1)}{4} \\
 &= \frac{1}{2}(\sqrt{5}+1)
 \end{aligned}$$

$$\begin{aligned}
 3i \quad \frac{\sqrt{2}}{2+\sqrt{3}} &= \frac{\sqrt{2}(2-\sqrt{3})}{(2+\sqrt{3})(2-\sqrt{3})} \\
 &= \frac{\sqrt{2}(2-\sqrt{3})}{4-2\sqrt{3}+2\sqrt{3}-3} \\
 &= \frac{\sqrt{2}(2-\sqrt{3})}{1} \\
 &= 2\sqrt{2}-\sqrt{6}
 \end{aligned}$$

$$\begin{aligned}
 3j \quad \frac{2\sqrt{3}}{\sqrt{6}-2} &= \frac{2\sqrt{3}(\sqrt{6}+2)}{(\sqrt{6}-2)(\sqrt{6}+2)} \\
 &= \frac{2\sqrt{3}(\sqrt{6}+2)}{6+2\sqrt{6}-2\sqrt{6}-4} \\
 &= \frac{2\sqrt{3}(\sqrt{6}+2)}{2} \\
 &= \sqrt{3}(\sqrt{6}+2) \\
 &= \sqrt{18}+2\sqrt{3} \\
 &= 3\sqrt{2}+2\sqrt{3}
 \end{aligned}$$

$$\begin{aligned}
 3k \quad \frac{1+\sqrt{2}}{1-\sqrt{2}} &= \frac{(1+\sqrt{2})(1+\sqrt{2})}{(1-\sqrt{2})(1+\sqrt{2})} \\
 &= \frac{1+\sqrt{2}+\sqrt{2}+2}{1+\sqrt{2}-\sqrt{2}-2} \\
 &= \frac{3+2\sqrt{2}}{-1} \\
 &= -3-2\sqrt{2}
 \end{aligned}$$

$$\begin{aligned}
 3l \quad \frac{3+\sqrt{5}}{\sqrt{5}-3} &= \frac{(3+\sqrt{5})(\sqrt{5}+3)}{(\sqrt{5}-3)(\sqrt{5}+3)} \\
 &= \frac{3\sqrt{5}+9+5+3\sqrt{5}}{5+3\sqrt{5}-3\sqrt{5}-9} \\
 &= \frac{6\sqrt{5}+14}{-4} \\
 &= -\frac{3}{2}\sqrt{5}-\frac{7}{2}
 \end{aligned}$$

$$\begin{aligned}
 4a \quad (1+\sqrt{2})(3+\sqrt{2}) &= 3+\sqrt{2}+3\sqrt{2}+2 \\
 &= 5+4\sqrt{2}
 \end{aligned}$$

$$\begin{aligned}
 4b \quad (1+\sqrt{2})(3-\sqrt{2}) &= 3-\sqrt{2}+3\sqrt{2}-2 \\
 &= 1+2\sqrt{2}
 \end{aligned}$$

$$\begin{aligned}
 4c \quad (1-\sqrt{2})(3+\sqrt{2}) &= 3+\sqrt{2}-3\sqrt{2}-2 \\
 &= 1-2\sqrt{2}
 \end{aligned}$$

$$\begin{aligned}
 4d \quad (1-\sqrt{2})(3-\sqrt{2}) &= 3-\sqrt{2}-3\sqrt{2}+2 \\
 &= 5-4\sqrt{2}
 \end{aligned}$$

$$\begin{aligned}
 4e \quad (\sqrt{3}+2)(4+\sqrt{3}) &= 4\sqrt{3}+3+8+2\sqrt{3} \\
 &= 6\sqrt{3}+11
 \end{aligned}$$

$$\begin{aligned}
 4f \quad (\sqrt{3}+2)(4-\sqrt{3}) &= 4\sqrt{3}-3+8-2\sqrt{3} \\
 &= 2\sqrt{3}+5
 \end{aligned}$$

$$\begin{aligned}
 4g \quad (\sqrt{3}-2)(4+\sqrt{3}) &= 4\sqrt{3}+3-8-2\sqrt{3} \\
 &= 2\sqrt{3}-5
 \end{aligned}$$

$$\begin{aligned}
 4h \quad (\sqrt{3}-2)(4-\sqrt{3}) &= 4\sqrt{3}-3-8+2\sqrt{3} \\
 &= 6\sqrt{3}-11
 \end{aligned}$$

$$\begin{aligned}
 4i \quad (\sqrt{6}+1)(\sqrt{2}+3) &= \sqrt{12}+3\sqrt{6}+\sqrt{2}+3 \\
 &= 2\sqrt{3}+3\sqrt{6}+\sqrt{2}+3
 \end{aligned}$$

$$\begin{aligned}
 4j \quad (\sqrt{6}+1)(\sqrt{2}-3) &= \sqrt{12}-3\sqrt{6}+\sqrt{2}-3 \\
 &= 2\sqrt{3}-3\sqrt{6}+\sqrt{2}-3
 \end{aligned}$$

$$\begin{aligned}
 4k \quad (\sqrt{6}-1)(\sqrt{2}+3) &= \sqrt{12}+3\sqrt{6}-\sqrt{2}-3 \\
 &= 2\sqrt{3}+3\sqrt{6}-\sqrt{2}-3
 \end{aligned}$$

$$\begin{aligned}
 4l \quad (\sqrt{6}-1)(\sqrt{2}-3) &= \sqrt{12}-3\sqrt{6}-\sqrt{2}+3 \\
 &= 2\sqrt{3}-3\sqrt{6}-\sqrt{2}+3
 \end{aligned}$$

$$\begin{aligned}
 5a \quad x^3 \times x^7 &= x^{3+7} \\
 &= x^{10}
 \end{aligned}$$

$$\begin{aligned}
 5b \quad 7x^5 \times 3x^6 &= 7 \times 3 \times x^{5+6} \\
 &= 21x^{11}
 \end{aligned}$$

$$\begin{aligned}
 5c \quad 5x^4 \times 8x^7 &= 5 \times 8 \times x^{4+7} \\
 &= 40x^{11}
 \end{aligned}$$

$$\begin{aligned}
 5d \quad x^8 \div x^2 &= x^{8-2} \\
 &= x^6
 \end{aligned}$$

$$\begin{aligned}
 5e \quad 8x^7 \div 2x^9 &= \frac{8}{2} \times x^{7-9} \\
 &= 4x^{-2}
 \end{aligned}$$

$$\begin{aligned}
 5f \quad 3x^8 \div 12x^7 &= \frac{3}{12} \times x^{8-7} \\
 &= \frac{1}{4}x
 \end{aligned}$$

$$\begin{aligned}
 5g \quad (x^5)^7 &= x^{5 \times 7} \\
 &= x^{35}
 \end{aligned}$$

$$\begin{aligned}
 5h \quad (x^2)^{-5} &= x^{2 \times (-5)} \\
 &= x^{-10}
 \end{aligned}$$

$$\begin{aligned} 5i \quad (3x^2)^4 &= 3^4 \times x^{2 \times 4} \\ &= 81x^8 \end{aligned}$$

$$\begin{aligned} 5j \quad (6x^5)^2 &= 6^2 \times x^{5 \times 2} \\ &= 36x^{10} \end{aligned}$$

$$\begin{aligned} 5k \quad \sqrt{x^3} &= (x^3)^{\frac{1}{2}} \\ &= x^{\frac{3}{2}} \end{aligned}$$

$$\begin{aligned} 5l \quad \sqrt[4]{x^5} &= (x^5)^{\frac{1}{4}} \\ &= x^{\frac{5}{4}} \end{aligned}$$

$$\begin{aligned} 5m \quad \frac{5\sqrt{x}}{x} &= \frac{5x^{\frac{1}{2}}}{x^1} \\ &= 5 \times x^{\frac{1}{2} - 1} \\ &= 5 \times x^{\frac{1}{2} - 1} \\ &= 5x^{-\frac{1}{2}} \end{aligned}$$

$$\begin{aligned} 5n \quad 2x\sqrt{x} &= 2 \times x^1 \times x^{\frac{1}{2}} \\ &= 2 \times x^{1 + \frac{1}{2}} \\ &= 2x^{\frac{3}{2}} \end{aligned}$$

$$\begin{aligned} 5o \quad \frac{x^2}{3\sqrt{x}} &= \frac{x^2}{3x^{\frac{1}{2}}} \\ &= \frac{1}{3} \times x^{2 - \frac{1}{2}} \\ &= \frac{1}{3} x^{\frac{3}{2}} \end{aligned}$$

$$\begin{aligned} 5p \quad x^3(x^5 - 1) &= x^{3+5} - x^3 \\ &= x^8 - x^3 \end{aligned}$$

$$\begin{aligned} 5q \quad x^3(\sqrt{x} + 2) &= x^3(x^{\frac{1}{2}} + 2) \\ &= x^{3 + \frac{1}{2}} + 2x^3 \\ &= x^{\frac{7}{2}} + 2x^3 \end{aligned}$$

$$\begin{aligned} 5r \quad \frac{x+2}{x^3} &= \frac{x}{x^3} + \frac{2}{x^3} \\ &= x^{1-3} + 2x^{-3} \\ &= x^{-2} + 2x^{-3} \end{aligned}$$

$$\begin{aligned} 5s \quad \frac{\sqrt{x}+3}{x} &= \frac{x^{\frac{1}{2}}+3}{x^1} \\ &= \frac{x^{\frac{1}{2}}}{x^1} + \frac{3}{x^1} \\ &= x^{\frac{1}{2}-1} + 3x^{-1} \\ &= x^{-\frac{1}{2}} + 3x^{-1} \end{aligned}$$

$$\begin{aligned} 5t \quad \frac{3-x^3}{\sqrt{x}} &= \frac{3-x^3}{x^{\frac{1}{2}}} \\ &= \frac{3}{x^{\frac{1}{2}}} - \frac{x^3}{x^{\frac{1}{2}}} \\ &= 3x^{-\frac{1}{2}} - x^{3-\frac{1}{2}} \\ &= 3x^{-\frac{1}{2}} - x^{\frac{5}{2}} \end{aligned}$$

$$\begin{aligned} 5u \quad (\sqrt{x}+3)^2 &= x + 3\sqrt{x} + 3\sqrt{x} + 9 \\ &= x + 6\sqrt{x} + 9 \end{aligned}$$

$$\begin{aligned} 5v \quad \frac{3+\sqrt{x}}{x^2} &= \frac{3}{x^2} + \frac{x^{\frac{1}{2}}}{x^2} \\ &= 3x^{-2} + x^{\frac{1}{2}-2} \\ &= 3x^{-2} + x^{-\frac{3}{2}} \end{aligned}$$

$$\begin{aligned} 5w \quad \frac{1-x}{2\sqrt{x}} &= \frac{1}{2x^{\frac{1}{2}}} - \frac{x}{2x^{\frac{1}{2}}} \\ &= \frac{1}{2} \times \frac{1}{x^{\frac{1}{2}}} - \frac{1}{2} \times x^{1-\frac{1}{2}} \\ &= \frac{1}{2} x^{-\frac{1}{2}} - \frac{1}{2} x^{\frac{1}{2}} \end{aligned}$$

$$\begin{aligned} 5x \quad \frac{\sqrt{x}+2}{3x^3} &= \frac{x^{\frac{1}{2}}+2}{3x^3} \\ &= \frac{1}{3} \times x^{\frac{1}{2}-3} + \frac{2}{3} \times x^{-3} \\ &= \frac{1}{3} x^{-\frac{5}{2}} + \frac{2}{3} x^{-3} \end{aligned}$$

### Try it 1B

$$\begin{aligned} 1 \quad 3x+8 &= 5x-6 \\ 8 &= 2x-6 \Rightarrow 2x=14 \\ &\Rightarrow x=7 \end{aligned}$$

$$\begin{aligned} 2 \quad 7x-4 &> x+8 \\ 6x-4 &> 8 \Rightarrow 6x > 12 \\ &\Rightarrow x > 2 \end{aligned}$$