

Question Number	Scheme	Marks
2.(a)	$\frac{1}{4-2\sqrt{2}} = \frac{1}{4-2\sqrt{2}} \times \frac{4+2\sqrt{2}}{4+2\sqrt{2}}$	M1
	$= \frac{4+2\sqrt{2}}{16-8} = \frac{1}{2} + \frac{1}{4}\sqrt{2}$ oe	A1 (2)
(b)	$4x = 2\sqrt{2}x + 20\sqrt{2} \Rightarrow (4-2\sqrt{2})x = 20\sqrt{2}$	M1
	$\Rightarrow x = \frac{20\sqrt{2}}{(4-2\sqrt{2})} = 20\sqrt{2} \times (a)$	dM1
	$\Rightarrow x = 20\sqrt{2} \times \left(\frac{1}{2} + \frac{1}{4}\sqrt{2}\right) = 10 + 10\sqrt{2}$	A1 (3) (5 marks)

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1. (a)	$p^{\frac{1}{2}} = \left(\frac{1}{16}x^4\right)^{\frac{1}{2}} = \frac{1}{4}x^2$	B1 (1)
(b)	$(pq)^{-1} = \left(\frac{1}{16}x^4 \times \frac{40}{x^3}\right)^{-1} = \left(\frac{5}{2}x\right)^{-1} = \frac{2}{5}x^{-1}$	M1, A1 (2)
(c)	$p q^2 = \frac{1}{16}x^4 \times \left(\frac{40}{x^3}\right)^2 = \frac{1600}{16} \times \frac{x^4}{x^6} = 100x^{-2}$	M1, A1 (2) (5 marks)

Question Number	Scheme	Marks
2a	$\frac{1}{8}x$	B1
		(1)
b	$\frac{1}{256}x^{\frac{3}{2}}$	B1
		(1)
c	$\left(\frac{1}{2}\left(\frac{1}{64}x^2 \times \frac{16}{\sqrt{x}}\right)\right)^{-\frac{4}{3}} = \left(\frac{1}{8}x^{\frac{3}{2}}\right)^{-\frac{4}{3}} = 16x^{-2}$	M1A1
		(2) (4 marks)

(2)

Question Number	Scheme	Marks
8	$x - 6x^{\frac{1}{2}} + 4 = 0$ $x^{\frac{1}{2}} = 3 \pm \sqrt{5} \text{ oe}$ $x = (3 \pm \sqrt{5})^2 \Rightarrow x = 14 \pm 6\sqrt{5}$	M1 A1 M1 A1 A1 (5 marks)