

Question		Answer	Marks	Part Marks and Guidance		
1			25%	4	<p>M3 for $\frac{\sqrt{10}}{\sqrt{160}} \times \frac{\sqrt{160}}{\sqrt{160}} \times 100$ or $\frac{\sqrt{10}}{4\sqrt{10}} \times 100$ or better</p> <p>Or M2 for $\frac{\sqrt{10}}{\sqrt{160}} \times \frac{\sqrt{160}}{\sqrt{160}}$ or $\frac{\sqrt{10}}{4\sqrt{10}}$ or better</p> <p>Or M1 for $\frac{\sqrt{10}}{\sqrt{160}}$ or $\frac{\sqrt{160}}{\sqrt{10}}$ or better or $4\sqrt{10}$</p>	<p>eg $\frac{1}{4}$</p> <p>eg 4</p>

2		$x = 1\frac{1}{2}$ oe $y = -5$ nfw	<p>3</p> <p>M1 for multiplying one (or both) equation(s) to get either coefficient equal (allow 1 error) <i>and</i> adding or subtracting as appropriate (allow 1 (further) error) eg $4x + y = 1$ $12x + 3y = 3$ $4x - 6y = 36$ or $2x - 3y = 18$</p> <p>$7y = -35$ or $14x = 21$</p> <p>A1FT for either x or y correct oe isw $y = -5$ or $x = \frac{3}{2}$ or $1\frac{1}{2}$ or 1.5</p> <p>Or if substitution used M1 for rearranging and substituting eg $2x - 3(1 - 4x) = 18$ or better (allow 1 error) then A mark as above.</p>	<p>If no more than 1 error in multiplication (and no errors in addition/subtraction) follow through for a maximum of 2 marks</p> <p>If separate attempts made to eliminate x and y mark to the candidate's benefit</p> <p>Correct x or y with no working implies M1A1</p> <p>Correct answer with no working scores 3.</p>
---	--	---------------------------------------	--	---

3	(a)	$2\sqrt{3}$	2	M1 for $\times \frac{\sqrt{3}}{\sqrt{3}}$ soi by $\frac{6\sqrt{3}}{\sqrt{3}}$
	(b)	$4\sqrt{3}$	2	B1 for $\sqrt{48}$

4	(a)	(i)	25	1		Condone 5^2 or $\sqrt{625}$ but not 5×5
		(ii)	$\sqrt{5}$	1		Condone $\frac{3\sqrt{5}}{3}$ or $1\sqrt{5}$
		(iii)	$10\sqrt{2}$	3	<p>B2 for $2\sqrt{50}$ or $5\sqrt{8}$ or $\sqrt{100 \times 2}$ or $\sqrt{100}\sqrt{2}$</p> <p>Or B1 for $\sqrt{200}$ or $\sqrt{4}\sqrt{50}$ or $\sqrt{5}\sqrt{5}\sqrt{2}\sqrt{2}\sqrt{1}$</p> <p>or ($\sqrt{40} =$) $2\sqrt{10}$ or $2\sqrt{5}\sqrt{2}$ or $\sqrt{5}\sqrt{8}$ or $\sqrt{2}\sqrt{20}$ or $\sqrt{5}\sqrt{2}\sqrt{2}\sqrt{2}$</p>	<p>$\sqrt{5 \times 40}$ does not score unless taken further</p> <p>If superfluous 'x' signs used (eg $10 \times \sqrt{2}$), withhold 1 mark</p>
	(b)			2		Mark as NR even if attempted

5	(a)		$\sqrt{6}$ final answer	2	B1 for $\sqrt{36}$ seen or $\sqrt{\sqrt{4} \times \sqrt{3} \times \sqrt{3}}$ or better	<p>Accept $\sqrt{2} \times \sqrt{3}$</p> <p>Condone $6^{\frac{1}{2}}$</p> <p>$2\sqrt{36}$ etc scores 0</p>
	(b)		$\frac{2\sqrt{5}}{5}$	1	isw	

6	(a)	12.5	3	B1 for $SF = \frac{20}{8}$ oe M1 for <i>their</i> $SF \times 5$	B1 can be awarded in either part
	(b)	6			

7	(a)	$9a^6b^8$ final answer	3	B1 for each of 9, a^6 and b^8 where final answer is in correct form Or SC1 for incorrect form with at least one of 9, a^6 and b^8 correct	eg $9a^6 + b^8$ scores SC1
	(b)	6 nfw			
	(c)	$\frac{1}{5}$ or 0.2	2	B1 for $\frac{1}{125^{\frac{1}{3}}}$ or $\frac{1}{\sqrt[3]{125}}$ or 5^{-1} or $\sqrt[3]{125}$ or $\sqrt[3]{-125}$ or 5 or -5 or $-\frac{1}{5}$	
	(d)	$4\sqrt{6}$ or $4\sqrt{2}\sqrt{3}$ final answer	2	B1 for $\frac{24}{\sqrt{6}} \times \frac{\sqrt{6}}{\sqrt{6}}$ or better	

8			$a = 2$ $a = 2k$ $b = 5$ or $b = 5k$ $c = -6$ $c = -6k$	1 1 2	Any consistent $k \neq 0$ M1 for $(\textit{their } b)^2 - 4 \times (\textit{their } a) \times c = 73$ oe	Must be an equation
---	--	--	---	-------------	---	---------------------