Algebraic Expression - Edexcel Past Exam Questions MARK SCHEME

Question 1: Jan 05 Q1

Question number	Scheme	Marks
	(a) 4	B1
	(b) $16^{-\frac{3}{2}} = \frac{1}{16^{\frac{3}{2}}}$ and attempt to find $16^{\frac{3}{2}}$	M1
	$\frac{1}{64}$ (or exact equivalent, e.g. 0.015625)	A1 (3)
		3
	(b) Any attempt to evaluate $16^{\frac{3}{2}}$. Answer only scores both marks.	

Question 2: June 05 Q1

Question Number	Scheme	Marks
(a)	2 Penalise $\pm$	B1 (1)
(b)	$8^{-\frac{2}{3}} = \frac{1}{\sqrt[3]{64}}$ or $\frac{1}{(a)^2}$ or $\frac{1}{\sqrt[3]{8^2}}$ or $\frac{1}{8^{\frac{2}{3}}}$ Allow $\pm$	M1
	$= \frac{1}{4}$ or 0.25	A1 (2)
		(3)
(b)	M1 for understanding that "-" power means reciprocal $8^{\frac{2}{3}} = 4$ is M0A0 and $-\frac{1}{4}$ is M1A0	

Question 3: June 05 Q7

Question Number	Scheme	Marks
(a)	$(3-\sqrt{x})^2 = 9 - 6\sqrt{x} + x$ $\div by\sqrt{x} \quad \rightarrow 9x^{-\frac{1}{2}} - 6 + x^{\frac{1}{2}}$	M1 A1 c.s.o. (2)
(a)	M1 Attempt to multiply out $(3-\sqrt{x})^2$. Must have 3 or 4 terms, allow one sign error A1 cso Fully correct solution to printed answer. Penalise wrong working.	

Question 4: Jan 06 Q1

Question number	Scheme	Marks
	$x(x^2-4x+3)$ Factor of x. (Allow $(x-0)$) $= x(x-3)(x-1)$ Factorise 3 term quadratic	M1 M1 A1 (3) **Total 3 marks**
	Alternative:	
	$(x^2-3x)(x-1)$ or $(x^2-x)(x-3)$ scores the second M1 (allow ± for each sign), then $x(x-3)(x-1)$ scores the first M1, and A1 if correct. Alternative: Finding factor $(x-1)$ or $(x-3)$ by the factor theorem scores the second M1, then completing, using factor x, scores the first M1, and A1 if correct. Factors "split": e.g. $x(x^2-4x+3) \Rightarrow (x-3)(x-1)$. Allow full marks. Factor x not seen: e.g. Dividing by $x \Rightarrow (x-3)(x-1)$. M0 M1 A0. If an equation is solved, i.s.w.	

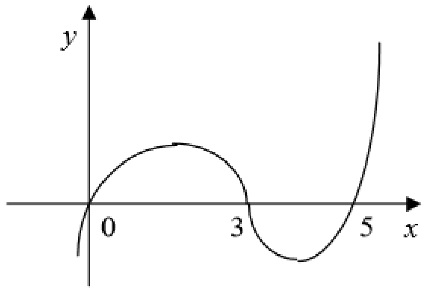
Question 5: Jan 06 Q5

Question number	Scheme	Marks
	(a) $3\sqrt{5}$ (or $a = 3$)	B1
		(1)
	(b) $\dfrac{2(3+\sqrt{5})}{(3-\sqrt{5})} \times \dfrac{(3+\sqrt{5})}{(3+\sqrt{5})}$	M1
	$(3-\sqrt{5})(3+\sqrt{5}) = 9-5$ $(= 4)$ (Used as or intended as denominator)	B1
	$(3+\sqrt{5})(p \pm q\sqrt{5}) = \ldots$ 4 terms $(p \neq 0, q \neq 0)$ (Independent)	M1
	or $(6+2\sqrt{5})(p \pm q\sqrt{5}) = \ldots$ 4 terms $(p \neq 0, q \neq 0)$	
	[Correct version: $(3+\sqrt{5})(3+\sqrt{5}) = 9+3\sqrt{5}+3\sqrt{5}+5$, or double this.]	
	$\dfrac{2(14+6\sqrt{5})}{4} = 7+3\sqrt{5}$ 1^{st} A1: $b = 7$, 2^{nd} A1: $c = 3$	A1 A1
		(5)
		Total 6 marks

Question 6: June 06 Q6

Question number	Scheme	Marks
(a)	$16+4\sqrt{3}-4\sqrt{3}-\left(\sqrt{3}\right)^2$ or $16-3$	M1
	$=13$	A1c.a.o (2)
(b)	$\dfrac{26}{4+\sqrt{3}}\times\dfrac{4-\sqrt{3}}{4-\sqrt{3}}$	M1
	$=\dfrac{26(4-\sqrt{3})}{13}=\underline{8-2\sqrt{3}}$ or $8+(-2)\sqrt{3}$ or $a=8$ and $b=-2$	A1 (2)
		4
(a)	M1 For 4 terms, at least 3 correct e.g. $8+4\sqrt{3}-4\sqrt{3}-\left(\sqrt{3}\right)^2$ or $16\pm8\sqrt{3}-\left(\sqrt{3}\right)^2$ or $16+3$ 4^2 instead of 16 is OK $(4+\sqrt{3})(4+\sqrt{3})$ scores M0A0	
(b)	M1 For a correct attempt to rationalise the denominator Can be implied NB $\dfrac{-4+\sqrt{3}}{-4+\sqrt{3}}$ is OK	

Question 7: June 06 Q9

Question number	Scheme		Marks	
(a)	$\text{f}(x) = x[(x-6)(x-2)+3]$ or $x^3 - 6x^2 - 2x^2 + 12x + 3x = x($		M1	
	$\text{f}(x) = x(x^2 - 8x + 15)$	$b = -8$ or $c = 15$	A1	
		both and $a = 1$	A1	(3)
(b)	$(x^2 - 8x + 15) = (x-5)(x-3)$		M1	
	$\text{f}(x) = x(x-5)(x-3)$		A1	(2)
(c)		Shape	B1	
		their 3 <u>or</u> their 5	B1f.t.	
		<u>both</u> their 3 <u>and</u> their 5 and (0,0) by implication	B1f.t.	(3)
				8

(a)	M1	for a correct method to get the factor of x. $x($ as printed is the minimum.	
	1st A1	for b = -8 or c = 15.	
		-8 comes from -6-2 and must be coefficient of x, and 15 from 6x2+3 and must have no xs.	
	2nd A1	for a =1, b = -8 and c = 15. Must have $x(x^2 - 8x + 15)$.	
(b)	M1	for attempt to factorise their 3TQ from part (a).	
	A1	for all 3 terms correct. They must include the x.	
		For part (c) they must have <u>at most</u> 2 non-zero roots of their f(x) =0 to ft their 3 and their 5.	
(c)	1st B1	for correct shape (i.e. from bottom left to top right and two turning points.)	
	2nd B1f.t.	for crossing at their 3 or their 5 indicated on graph or in text.	
	3rd B1f.t.	if graph passes through (0, 0) [needn't be marked] and both their 3 and their 5.	

Question 8: Jan 07 Q2

Question number	Scheme	Marks
	(a) $6\sqrt{3}$ $\quad (a = 6)$	B1 (1)
	(b) Expanding $(2-\sqrt{3})^2$ to get 3 or 4 separate terms	M1
	$7, \; -4\sqrt{3}$ $\quad (b = 7, \; c = -4)$	A1, A1 (3)
		4
	(a) $\pm 6\sqrt{3}$ also scores B1. (b) M1: The 3 or 4 terms may be wrong. 1st A1 for 7, 2nd A1 for $-4\sqrt{3}$. Correct answer $7-4\sqrt{3}$ with no working scores all 3 marks. $7+4\sqrt{3}$ with or without working scores M1 A1 A0. Other wrong answers with no working score no marks.	

Question 9: June 07 Q1

Question number	Scheme	Marks
	$9-5$ or $3^2+3\sqrt{5}-3\sqrt{5}-\sqrt{5}\times\sqrt{5}$ or $3^2-\sqrt{5}\times\sqrt{5}$ or $3^2-\left(\sqrt{5}\right)^2$ $=\underline{4}$	M1 A1cso (2) **2**
	M1 for an attempt to multiply out. There must be at least 3 correct terms. Allow one sign slip only, no arithmetic errors. e.g. $3^2+3\sqrt{5}-3\sqrt{5}+\left(\sqrt{5}\right)^2$ is M1A0 $3^2+3\sqrt{5}+3\sqrt{5}-\left(\sqrt{5}\right)^2$ is M1A0 as indeed is $9\pm 6\sqrt{5}-5$ BUT $9+\sqrt{15}-\sqrt{15}-5(=4)$ is M0A0 since there is more than a sign error. $6+3\sqrt{5}-3\sqrt{5}-5$ is M0A0 since there is an arithmetic error. If all you see is 9 ± 5 that is M1 but please check it has not come from incorrect working. Expansion of $\left(3+\sqrt{5}\right)\left(3+\sqrt{5}\right)$ is M0A0 A1cso for 4 only. Please check that no incorrect working is seen. Correct answer only scores both marks.	

Question 10: June 07 Q2

Question number	Scheme	Marks	
	(a) Attempt $\sqrt[3]{8}$ or $\sqrt[3]{(8^4)}$	M1	
	$= \underline{16}$	A1	(2)
	(b) $\underline{5x^{\frac{1}{3}}}$ $5,\ x^{\frac{1}{3}}$	B1, B1	(2)
			4

(a)	M1 for: 2 (on its own) or $\left(2^3\right)^{\frac{4}{3}}$ or $\sqrt[3]{8}$ or $\left(\sqrt[3]{8}\right)^4$ or 2^4 or $\sqrt[3]{8^4}$ or $\sqrt[3]{4096}$ 8^3 or 512 or $(4096)^{\frac{1}{3}}$ is M0 A1 for 16 only
(b)	1^{st} B1 for 5 on its own or $\times$ something. So e.g. $\frac{5x^{\frac{4}{3}}}{x}$ is B1 But $5^{\frac{1}{3}}$ is B0 An expression showing cancelling is not sufficient (see first expression of QC0184500123945 the mark is scored for the second expression) 2^{nd} B1 for $x^{\frac{1}{3}}$ Can use ISW (incorrect subsequent working) e.g $5x^{\frac{4}{3}}$ scores B1B0 but it may lead to $\sqrt[3]{5x^4}$ which we ignore as ISW. Correct answers only score full marks in both parts.

Question 11: Jan 08 Q2

Question number	Scheme	Marks	
	(a) 2	B1	(1)
	(b) x^9 seen, or $(\text{answer to (a)})^3$ seen, or $(2x^3)^3$ seen.	M1	
	$8x^9$	A1	(2)
			3
	(b) M: Look for x^9 first… if seen, this is M1. If not seen, look for $(\text{answer to (a)})^3$, e.g. 2^3 … this would score M1 even if it does not subsequently become 8. (Similarly for other answers to (a)). In $(2x^3)^3$, the 2^3 is implied, so this scores the M mark. <u>Negative answers</u>: (a) Allow -2. Allow ± 2. Allow '2 or -2'. (b) Allow $\pm 8x^9$. Allow '$8x^9$ or $-8x^9$'. N.B. If part (a) is wrong, it is possible to 'restart' in part (b) and to score full marks in part (b).		

Question 12: Jan 08 Q3

Question number	Scheme	Marks
	$\dfrac{(5-\sqrt{3})}{(2+\sqrt{3})}\times\dfrac{(2-\sqrt{3})}{(2-\sqrt{3})}$	M1
	$=\dfrac{10-2\sqrt{3}-5\sqrt{3}+(\sqrt{3})^2}{\ldots}$ $\left(=\dfrac{10-7\sqrt{3}+3}{\ldots}\right)$	M1
	$(=13-7\sqrt{3})$ $\left(\text{Allow } \dfrac{13-7\sqrt{3}}{1}\right)$ $13 \quad (a=13)$	A1
	$-7\sqrt{3} \quad (b=-7)$	A1 (4)
		4
	1st M: Multiplying top and bottom by $(2-\sqrt{3})$. (As shown above is sufficient). 2nd M: Attempt to multiply out numerator $(5-\sqrt{3})(2-\sqrt{3})$. Must have at least 3 terms correct. Final answer: Although 'denominator = 1' may be implied, the $13-7\sqrt{3}$ must obviously be the final answer (not an intermediate step), to score full marks. (Also M0 M1 A1 A1 is not an option). The A marks cannot be scored unless the 1st M mark has been scored, but this 1st M mark could be implied by correct expansions of both numerator and denominator. It is possible to score M1 M0 A1 A0 or M1 M0 A0 A1 (after 2 correct terms in the numerator). Special case: If numerator is multiplied by $(2+\sqrt{3})$ instead of $(2-\sqrt{3})$, the 2nd M can still be scored for at least 3 of these terms correct: $10-2\sqrt{3}+5\sqrt{3}-(\sqrt{3})^2$. The maximum score in the special case is 1 mark: M0 M1 A0 A0. Answer only: Scores no marks. Alternative method: $5-\sqrt{3}=(a+b\sqrt{3})(2+\sqrt{3})$ $(a+b\sqrt{3})(2+\sqrt{3})=2a+a\sqrt{3}+2b\sqrt{3}+3$ M1: At least 3 terms correct. $5=2a+3b$ $-1=a+2b$ $a=\ldots$ or $b=\ldots$ M1: Form and attempt to solve simultaneous equations. $a=13,\quad b=-7$ A1, A1	

Question 13: June 08 Q2

Question Number	Scheme	Marks
	$x(x^2-9)$ or $(x\pm0)(x^2-9)$ or $(x-3)(x^2+3x)$ or $(x+3)(x^2-3x)$	B1
	$x(x-3)(x+3)$	M1 A1 (3)
		(3 marks)

Question 14: Jan 09 Q1

Question Number	Scheme	Marks
(a)	**5** (±5 is B0)	B1 (1)
(b)	$\frac{1}{(\text{their } 5)^2}$ or $\left(\frac{1}{\text{their } 5}\right)^2$	M1
	$=\frac{1}{25}$ or 0.04 $\left(\pm\frac{1}{25}\text{ is A0}\right)$	A1 (2) **[3]**
(b)	M1 follow through their value of 5. Must have reciprocal and square. 5^{-2} is <u>not</u> sufficient to score this mark, unless $\frac{1}{5^2}$ follows this. A negative introduced at any stage can score the M1 but not the A1, e.g. $125^{-2/3}=\left(-\frac{1}{5}\right)^2=\frac{1}{25}$ scores M1 A0 $125^{-2/3}=-\left(\frac{1}{5}\right)^2=-\frac{1}{25}$ scores M1 A0. Correct answer with no working scores both marks. <u>Alternative</u>: $\frac{1}{\sqrt[3]{125^2}}$ or $\frac{1}{(125^2)^{1/3}}$ M1 (reciprocal and the correct number squared) $\left(=\frac{1}{\sqrt[3]{15625}}\right)$ $=\frac{1}{25}$ A1	

Question 15: Jan 09 Q3

Question Number	Scheme	Marks
	$\sqrt{7}^2 + 2\sqrt{7} - 2\sqrt{7} - 2^2$, or $7 - 4$ or an exact equivalent such as $\sqrt{49} - 2^2$ $= \mathbf{3}$	M1 A1 **[2]**
	M1 for an expanded expression. At worst, there can be <u>one wrong term</u> and <u>one wrong sign</u>, or <u>two wrong signs</u>. e.g. $7 + 2\sqrt{7} - 2\sqrt{7} - 2$ is M1 (one wrong term -2) $7 + 2\sqrt{7} + 2\sqrt{7} + 4$ is M1 (two wrong signs $+2\sqrt{7}$ and $+4$) $7 + 2\sqrt{7} + 2\sqrt{7} + 2$ is M1 (one wrong term $+2$, one wrong sign $+ 2\sqrt{7}$) $\sqrt{7} + 2\sqrt{7} - 2\sqrt{7} + 4$ is M1 (one wrong term $\sqrt{7}$, one wrong sign $+4$) $\sqrt{7} + 2\sqrt{7} - 2\sqrt{7} - 2$ is M0 (two wrong terms $\sqrt{7}$ and -2) $7 + \sqrt{14} - \sqrt{14} - 4$ is M0 (two wrong terms $\sqrt{14}$ and $-\sqrt{14}$) If only 2 terms are given, they must be correct, i.e. $(7 - 4)$ or an equivalent unsimplified version to score M1. The terms can be seen <u>separately</u> for the M1. Correct answer with <u>no working</u> scores both marks.	

Question 16: Jan 09 Q6

Question Number	Scheme	Marks
(a)	$2x^{3/2}$ or $p = \frac{3}{2}$ (Not $2x\sqrt{x}$)	B1
	$-x$ or $-x^1$ or $q = 1$	B1 (2)
(a)	1st B1 for $p = 1.5$ or exact equivalent 2nd B1 for $q = 1$	

Question 17: June 09 Q1

Question Number	Scheme	Marks
Q (a)	$(3\sqrt{7})^2 = 63$	B1 (1)
(b)	$(8+\sqrt{5})(2-\sqrt{5}) = 16-5+2\sqrt{5}-8\sqrt{5}$	M1
	$= 11,\ -6\sqrt{5}$	A1, A1
		(3) [4]
(a) (b)	B1 for 63 only M1 for an attempt to expand <u>their</u> brackets with ≥ 3 terms correct. They may collect the $\sqrt{5}$ terms to get $16-5-6\sqrt{5}$ Allow $-\sqrt{5}\times\sqrt{5}$ or $-(\sqrt{5})^2$ or $-\sqrt{25}$ instead of the -5 These 4 values may appear in a list or table but they should have minus signs included **The next two marks should be awarded for the final answer but check that correct values follow from correct working. Do not use ISW rule** 1st A1 for 11 from $16-5$ <u>or</u> $-6\sqrt{5}$ from $-8\sqrt{5}+2\sqrt{5}$ 2nd A1 for <u>both</u> 11 and $-6\sqrt{5}$. <u>S.C - Double sign error in expansion</u> For $16-5-2\sqrt{5}+8\sqrt{5}$ leading to 11 + … allow <u>one</u> mark	

Question 18: June 09 Q2

Question Number	Scheme	Marks
Q	$32 = 2^5$ or $2048 = 2^{11}$, $\sqrt{2} = 2^{1/2}$ or $\sqrt{2048} = (2048)^{\frac{1}{2}}$ $a = \frac{11}{2}$ $\left(\text{or } 5\frac{1}{2} \text{ or } 5.5\right)$	B1, B1 B1 [3]
	1^{st} B1 for $32 = 2^5$ or $2048 = 2^{11}$ This should be explicitly seen: $32\sqrt{2} = 2^a$ followed by $2^5\sqrt{2} = 2^a$ is OK Even writing $32 \times 2 = 2^5 \times 2\left(= 2^6\right)$ is OK but simply writing $32 \times 2 = 2^6$ is NOT 2^{nd} B1 for $2^{\frac{1}{2}}$ or $(2048)^{\frac{1}{2}}$ seen. This mark may be implied 3^{rd} B1 for answer as written. **Need a = …** so $2^{\frac{11}{2}}$ is B0 $a = \frac{11}{2}$ $\left(\text{or } 5\frac{1}{2} \text{ or } 5.5\right)$ with no working scores full marks. If $a = 5.5$ seen then award 3/3 unless it is clear that the value follows from totally incorrect work. Part solutions: e.g. $2^5\sqrt{2}$ scores the first B1. <u>Special case</u>: If $\sqrt{2} = 2^{1/2}$ is not explicitly seen, but the final answer includes $\frac{1}{2}$, e.g. $a = 2\frac{1}{2}$, $a = 4\frac{1}{2}$, the second B1 is given by implication.	

Question 19: Jan 10 Q2

Question number	Scheme	Marks
	(a) $(7+\sqrt{5})(3-\sqrt{5}) = 21-5+3\sqrt{5}-7\sqrt{5}$ Expand to get 3 or 4 terms	M1
	$=16,\ -4\sqrt{5}$ (1st A for 16, 2nd A for $-4\sqrt{5}$)	A1, A1
	(i.s.w. if necessary, e.g. $16-4\sqrt{5} \to 4-\sqrt{5}$)	(3)
	(b) $\frac{7+\sqrt{5}}{3+\sqrt{5}} \times \frac{3-\sqrt{5}}{3-\sqrt{5}}$ (This is sufficient for the M mark)	M1
	Correct denominator without surds, i.e. $9-5$ or 4	A1
	$4-\sqrt{5}$ or $4-1\sqrt{5}$	A1 (3) [6]
	(a) M1: Allowed for an attempt giving 3 or 4 terms, with at least 2 correct (even if unsimplified). e.g. $21-\sqrt{5}^2+\sqrt{15}$ scores M1. Answer only: $16-4\sqrt{5}$ scores full marks One term correct scores the M mark by implication, e.g. $26-4\sqrt{5}$ scores M1 A0 A1 (b) Answer only: $4-\sqrt{5}$ scores full marks One term correct scores the M mark by implication, e.g. $4+\sqrt{5}$ scores M1 A0 A0 $16-\sqrt{5}$ scores M1 A0 A0 Ignore subsequent working, e.g. $4-\sqrt{5}$ so $a=4,\ b=1$ Note that, as always, A marks are dependent upon the preceding M mark, so that, for example, $\frac{7+\sqrt{5}}{3+\sqrt{5}} \times \frac{3+\sqrt{5}}{3-\sqrt{5}} = \frac{\cdots\cdots}{4}$ is M0 A0. <u>Alternative</u> $(a+b\sqrt{5})(3+\sqrt{5}) = 7+\sqrt{5}$, then form simultaneous equations in a and b. M1 Correct equations: $3a+5b=7$ and $3b+a=1$ A1 $a=4$ and $b=-1$ A1	

Question 20: June 10 Q1

Question Number	Scheme	Marks
	$\left(\sqrt{75}-\sqrt{27}\right)=5\sqrt{3}-3\sqrt{3}$	M1
	$=2\sqrt{3}$	A1 2
	Notes	
	M1 for $5\sqrt{3}$ from $\sqrt{75}$ or $3\sqrt{3}$ from $\sqrt{27}$ seen anywhere A1 for $2\sqrt{3}$; allow $\sqrt{12}$ or or $k=2, x=3$ allow $k=1, x=12$ Some Common errors $\sqrt{75}-\sqrt{27}=\sqrt{48}$ leading to $4\sqrt{3}$ is M0A0 $25\sqrt{3}-9\sqrt{3}=16\sqrt{3}$ is M0A0	

Question 21: Jan 11 Q1

Question Number	Scheme	Marks
(a)	$16^{\frac{1}{4}}=2$ or $\frac{1}{16^{\frac{1}{4}}}$ or better	M1
	$\left(16^{-\frac{1}{4}}=\right)$ $\frac{1}{2}$ or 0.5 (ignore $\pm$)	A1
		(2)
(b)	$\left(2x^{-\frac{1}{4}}\right)^4=2^4x^{-\frac{4}{4}}$ or $\frac{2^4}{x^{\frac{4}{4}}}$ or equivalent	M1
	$x\left(2x^{-\frac{1}{4}}\right)^4=2^4$ or 16	A1 cao
		(2) **4**
	Notes	
(a)	M1 for a correct statement dealing with the $\frac{1}{4}$ or the $-$ power This may be awarded if 2 is seen or for reciprocal of their $16^{\frac{1}{4}}$ s.c ¼ is M1 A0 , also 2^{-1} is M1 A0 $\pm\frac{1}{2}$ is not penalised so M1 A1	
(b)	M1 for correct use of the power 4 on both the 2 and the x terms A1 for cancelling the x and simplifying to one of these two forms. Correct answers with no working get full marks	

Question 22: Jan 11 Q3

Question Number	Scheme	Marks
	$\frac{5-2\sqrt{3}}{\sqrt{3}-1}\times\frac{(\sqrt{3}+1)}{(\sqrt{3}+1)}$	M1
	$=\frac{...}{2}$ denominator of 2	A1
	Numerator $= 5\sqrt{3}+5-2\sqrt{3}\sqrt{3}-2\sqrt{3}$	M1
	So $\frac{5-2\sqrt{3}}{\sqrt{3}-1}=-\frac{1}{2}+\frac{3}{2}\sqrt{3}$	A1
		4
	Alternative: $(p+q\sqrt{3})(\sqrt{3}-1)=5-2\sqrt{3}$, and form simultaneous equations in p and q	M1
	$-p+3q=5$ and $p-q=-2$	A1
	Solve simultaneous equations to give $p=-\frac{1}{2}$ and $q=\frac{3}{2}$.	M1 A1
	<u>Notes</u>	
	1st M1 for multiplying numerator and denominator by same correct expression 1st A1 for a correct denominator as a single number (NB depends on M mark) 2nd M1 for an attempt to multiply the numerator by $(\sqrt{3}\pm1)$ and get 4 terms with at least 2 correct. 2nd A1 for the answer as written or $p=-\frac{1}{2}$ and $q=\frac{3}{2}$. Allow -0.5 and 1.5. (Apply isw if correct answer seen, then slip writing $p=$, $q=$)	
	Answer only (very unlikely) is full marks if correct – no part marks	

Question 23: June 11 Q1

Question Number	Scheme	Marks
(a)	5 (or ± 5)	B1 (1)
(b)	$25^{-\frac{3}{2}} = \frac{1}{25^{\frac{3}{2}}}$ **or** $25^{\frac{3}{2}} = 125$ or better	M1
	$\frac{1}{125}$ or 0.008 (or $\pm \frac{1}{125}$)	A1 (2) **3**
	Notes (a) Give B1 for 5 or ± 5 Anything else is B0 (including just -5) (b) M: Requires reciprocal OR $25^{\frac{3}{2}} = 125$ Accept $\frac{1}{5^3}, \frac{1}{\sqrt{15625}}, \frac{1}{25\times 5}, \frac{1}{25\sqrt{25}}, \frac{1}{\sqrt{25}^3}$ for M1 Correct answer with no working (or notation errors in working) scores both marks i.e. M1 A1 M1A0 for - $\frac{1}{125}$ without + $\frac{1}{125}$	

Question 24: June 11 Q6

Question Number	Scheme	Marks
(a)	$p = \frac{1}{2}, q = 2$ or $6x^{\frac{1}{2}}, 3x^2$	B1, B1 (2)
	Notes	
	(a) Accept any equivalent answers, e.g. $p = 0.5, q = 4/2$	