1MA0_2H

Question		Working	Answer	Mark	Notes
1		180 – 47	133	3	M1 for 180 – 47 A1 for 133 C1(dep on M1) for full reasons e.g. angles on a straight line add up to 180° and alternate angles are equal **OR** corresponding angles are equal **and** angles on a straight line add up to 180° **OR** vertically opposite angles (or vertically opposite angles) are equal **and** allied angles (or co-interior angles) add up to 180°
2	(a)	$\dfrac{546.7}{12.5} =$	43.736	2	B2 for 43.736 (B1 for 546.7 **or** $\dfrac{5467}{10}$ **or** $\dfrac{5467}{125}$ **or** 12.5 **or** $\dfrac{25}{2}$ **or** 43.7 **or** 43.8 **or** 43.73 **or** 43.74 **or** 40 **or** 44)
	(b)		40	1	B1 for 40 **or** ft from their answer to (a) provided (a) is written to 2 or more significant figures

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Question		Working	Answer	Mark	Notes
3	(a)		reasons	2	1st aspect : time frame 2nd aspect : overlapping boxes 3rd aspect : not exhaustive (eg. no box for more than 4) B2 any two aspects (B1 any one aspect)
	(b)		How much time do you spend playing sport each week/month None 1 hr to 2 hrs 3 hrs to 5 hrs More than 5 hrs	2	B1 for a suitable question which includes a time frame and unit (the time frame and unit could appear with the response boxes) B1 for at least 3 non-overlapping response boxes (need not be exhaustive) or at least 3 response boxes exhaustive for all integer values of their time unit (could be overlapping). [Do not allow inequalities in response boxes]

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Question	**Working**	**Answer**	**Mark**	**Notes**
4	<table><tr><td>*x*</td><td>–1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>*y*</td><td>–5</td><td>–2</td><td>1</td><td>4</td><td>7</td></tr></table> **OR** Using $y = mx + c$ gradient = 3 *y* intercept = –2	Straight line from (–1, –5) to (3, 7)	3	**(Table of values)** M1 for at least 2 correct attempts to find points by substituting values of *x*. M1 ft for plotting at least 2 of their points (any points plotted from their table must be correctly plotted) A1 for correct line between –1 and 3 **(No table of values)** M2 for at least 2 correct points (and no incorrect points) plotted **OR** line segment of $y = 3x–2$ drawn (ignore any additional incorrect segments) (M1 for at least 3 correct points plotted with no more than 2 incorrect points) A1 for correct line between –1 and 3 **(Use of $y = mx+c$)** M2 for line segment of $y = 3x – 2$ drawn (ignore any additional incorrect segments) (M1 for line drawn with gradient of 3 OR line drawn with a *y* intercept of –2 and a positive gradient) A1 for correct line between –1 and 3

Question	Working	Answer	Mark	Notes
5	$(17 - 2.8) \times 9.5 = 134.9$ $\pi \times (3.8 \div 2)^2 = 11.34...$ $134.9 - 2 \times 11.34... = 112.21$ $112.21 \div 25 = 4.488$	5	5	M1 for $(17 - 2.8) \times 9.5$ (=134.9) or $17 \times 9.5 - 2.8 \times 9.5$ (= 161.5 – 26.6 = 134.9) M1 for $\pi \times (3.8 \div 2)^2$ (= 11.33 – 11.35) M1 (dep on M1) for '134.9' – 2 × '11.34' A1 for 112 - 113 C1(dep on at least M1) for 'He needs 5 boxes' ft from candidate's calculation rounded up to the next integer
6		Farm shop	4	M1 for $12.5 \div 2.5$ (=5) M1 for '5'×1.83 or '5' × 183 A1 for (£)9.15 or 915(p) C1 (dep on at least M1) for decision ft working shown **OR** M1 for $12.5 \div 2.5$ (=5) M1 for 9 ÷ '5' or 900 ÷ '5' A1 for (£)1.8(0) or 180(p) C1 (dep on at least M1) for decision ft working shown **OR** M1 for $9 \div 12.5$ (=0.72) **or** $1.83 \div 2.5$ (=0.732) M1 for $9 \div 12.5$ (=0.72) **and** $1.83 \div 2.5$ (=0.732) A1 for 72(p) **and** 73.(2)(p) or (£)0.72 **and** (£)0.73(2) C1 (dep on at least M1) for decision ft working shown **OR** M1 for $12.5 \div 9$ (= 1.388...) M1 for $2.5 \div 1.83$ (= 1.366...) A1 for 1.38.... **and** 1.36... truncated or rounded C1 (dep on at least M1) for decision ft working shown

Question		Working	Answer	Mark	Notes
7	(a)		negative	1	B1 for negative
	(b)		10.3 – 11.7	2	M1 for a single straight line segment with negative gradient that could be used as a line of best fit or an indication on the diagram from 2.5 on the *x* axis A1 for an answer in the range 10.3 – 11.7 inclusive
8	(a)		Triangle with vertices (2,–1) (4, –1) (4, –4)	2	B2 for triangle with vertices (2,–1) (4, –1) (4, –4) (B1 for triangle in correct orientation **or** rotated 90° anticlockwise centre *O*
	(b)		Triangle with vertices (7, 2) (13, 2) (7, 11)	3	B3 for triangle with vertices (7, 2) (13, 2) (7, 11) (B2 for 2 vertices correct or enlargement scale factor 3 in wrong position or enlargement, centre (1,2), with different scale factor) (B1 for 1 vertex correct or enlargement, not from (1,2), different scale factor)
9			51	3	M1 200 × 25.82 (= 5164) A1 for 5164 or 5160 or 5100 or 5200 or 51.64 or 51.6(0) or 52 A1 for 51 cao **OR** M1 for 100 ÷ 25.82 (= 3.87…) **and** 200 ÷ '3.87…' (= 51.64) A1 for 5164 or 5160 or 5100 or 5200 or 51.64 or 51.6(0) or 52 A1 for 51 cao

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Question		**Working**	**Answer**	**Mark**	**Notes**
10	(a)		−1, 0, 1, 2, 3	2	B2 for all 5 correct values; ignore repeats, any order. (−1 for each omission or additional value)
	(b)	$7x − 3x < 4 + 9$ $4x < 13$	$x < 3.25$	2	M1 for a clear intention to use a correct operation to collect x terms or non-x terms in an (in)equality A1 for $x < 3.25$ oe (SC: B1 for 3.25 oe seen if M0 scored)
11		$x = 4$ gives 40 $x = 5$ gives 95 $x = 4.1$ gives 44.(321) $x = 4.2$ gives 48.(888) $x = 4.3$ gives 53.(707) $x = 4.4$ gives 58.(784) $x = 4.5$ gives 64.(125) $x = 4.6$ gives 69.(736) $x = 4.7$ gives 75.(623) $x = 4.8$ gives 81.(792) $x = 4.9$ gives 88.(249) $x = 4.61$ gives 70.3(12..) $x = 4.62$ gives 70.8(91..) $x = 4.63$ gives 71.4(72..) $x = 4.64$ gives 72.0(57..) $x = 4.65$ gives 72.6(44..)	4.6	4	B2 for a trial $4.6 \leq x \leq 4.7$ evaluated (B1 for a trial $4 \leq x \leq 5$ evaluated) B1 for a different trial $4.6 < x \leq 4.65$ evaluated B1 (dep on at least one previous B1) for 4.6 Accept trials correct to the nearest whole number (rounded or truncated) if the value of x is to 1 dp but correct to 1dp (rounded or truncated) if the value of x is to 2 dp. (Accept 72 for $x = 4.64$) NB : no working scores no marks even if the answer is correct.

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Question	**Working**	**Answer**	**Mark**	**Notes**
12	0.3 × 400	120	2	M1 for 0.3 × 400 oe A1 cao
13	5×3+15×8+25×11+35×9+45×9 =1130 1130 ÷ 40	28.25	4	M1 for finding fx with x consistent within intervals (including the end points) allow 1 error M1 (dep) for use of all correct mid-interval values M1 (dep on first M1) for $\Sigma fx \div 40$ or $\Sigma fx \div \Sigma f$ A1 for 28.25 or $28\frac{1}{4}$

Question		Working	Answer	Mark	Notes
14	(a)	$p^2 - 4p + 9p - 36$	$p^2 + 5p - 36$	2	M1 for all 4 terms correct (condone incorrect signs) or 3 out of 4 terms correct with correct signs A1 cao
	(b)	$5w - 8 = 3(4w + 2)$ $5w - 8 = 12w + 6$ $-8 - 6 = 12w - 5w$ $-14 = 7w$	-2	3	M1 for attempting to multiply both sides by 3 as a first step (this can be implied by equations of the form $5w - 8 = 12w + ?$ or $5w - 8 = ?w + 6$ i.e. the LHS must be correct M1 for isolating terms in w and the number terms correctly from $aw + b = cw + d$ A1 cao **OR** M1 for $\dfrac{5w}{3} - \dfrac{8}{3} = 4w + 2$ M1 for isolating terms in w and the number terms correctly A1 cao
	(c)		$(x + 7)(x - 7)$	1	B1 cao
	(d)		$3x^4 y^{\frac{3}{2}}$	2	B2 for $3x^4 y^{\frac{3}{2}}$ or $3x^4 y^{1.5}$ or $3x^4 y^{1\frac{1}{2}}$ (B1 for any two terms correct in a product eg. $3x^4 y^n$)

Question	Working	Answer	Mark	Notes
*15	180 × 365 =65700 65700 ÷1000 =65.7 65.7 × 91.22 =5993.154 5993.154÷100 + 28.20 =88.13... | D	U	C	T
---|---|---|---| | 366 | 65880 | 6010 | 88.30 | | 365 | 65700 | 5993 | 88.13 | | | 65000 | 5929 | 87.49 | | | 66000 | 6020 | 88.40 | | 364 | 65520 | 5976 | 87.96 | | 360 | 64800 | 5911 | 87.31 | | ~~336~~ | ~~60480~~ | 5517 | 83.37 |	Decision (Should have a water meter installed)	5	**Per year** M1 for 180 × '365' (= 65700) M1 for '65700' ÷ 1000 (= 65.7 or 65 or 66) M1 for '65.7' × 91.22 (= 5993...) A1 for answer in range (£)87 to (£)89 C1 (dep on at least M1) for conclusion following from working seen **OR (per day)** M1 for 107 ÷ '365' (= 0.293…) M1 for 180 ÷ 1000 × 91.22 (= 16.4196) M1 for 28.2 ÷ '365' + '0.164196' (units must be consistent) A1 for 29 – 30(p) and 24 – 24.3(p) oe C1 (dep on at least M1) for conclusion following from working seen **OR** M1 for (107 – 28.20) ÷ 0.9122 (= 86.384..) M1 for '86.384..'× 1000 (= 86384.5…) M1 for '365' × 180 (= 65700) A1 for 65700 and 86384.5... C1 (dep on at least M1) for conclusion following from working seen NB : Allow 365 or 366 or 52×7 (=364) or 12 × 30 (=360) or 365¼ for number of days

Question	**Working**	**Answer**	**Mark**	**Notes**
16	$\cos x = \dfrac{6.4}{9.6}$ $x = \cos^{-1}\dfrac{6.4}{9.6} =$	48.2	3	M1 for $\cos x = \dfrac{6.4}{9.6}$ or $\cos x = 0.66(6...)$ or $\cos x = 0.67$ M1 for $\cos^{-1}\dfrac{6.4}{9.6}$ or $\cos^{-1} 0.66(6...)$ or $\cos^{-1} 0.67$ A1 for $48.1 - 48.2$ **OR** Correct use of Pythagoras and then trigonometry, no marks until M1 for $\sin x = \dfrac{'7.155'}{9.6}$ or $\tan x = \dfrac{'7.155'}{6.4}$ or $\sin x = \dfrac{'7.155'}{9.6} \times \sin 90$ or $\cos x = \dfrac{6.4^2 + 9.6^2 - '7.155'^2}{2 \times 6.4 \times 9.6}$ M1 for $\sin^{-1}\dfrac{'7.155'}{9.6}$ or $\tan^{-1}\dfrac{'7.155'}{6.4}$ or $\sin^{-1}\left(\dfrac{'7.155'}{9.6} \times \sin 90\right)$ or $\cos^{-1}\left(\dfrac{6.4^2 + 9.6^2 - '7.155'^2}{2 \times 6.4 \times 9.6}\right)$ A1 for $48.1 - 48.2$ SC B2 for 0.841... (using rad) or 53.5... (using grad)

Question		Working	Answer	Mark	Notes
17		$6200 \times 1.025^3 =$ OR $6200 + \dfrac{2.5}{100} \times 6200 = 6355$ $6355 + \dfrac{2.5}{100} \times 6355 = 6513.875$ $6513.875 + \dfrac{2.5}{100} \times 6513.875 =$	6676.72	3	M2 for 6200×1.025^3 $(= 6676.72...)$ (M1 for 6200×1.025^n, $n \neq 3$) A1 for 6676.72, accept 6676.71 or 6676.73 **OR** M1 for 6200×1.025 **or** for $6200 + \dfrac{2.5}{100} \times 6200$ oe **or** for 6355 or 155 or 465 or 6665 M1 (dep) for a complete compound interest method shown for 3 years A1 for 6676.72, accept 6676.71 or 6676.73 [SC B2 for 476.71 or 476.72 or 476.73 seen]

Question	Working	Answer	Mark	Notes
18	$BD^2 + 12^2 = 16^2$ oe BD= $\sqrt{256-144}$ (=10.58...) $\sin 40 = \dfrac{'10.58'}{CD}$ $CD = \dfrac{'10.58'}{\sin 40}$	16.5	5	M1 for $BD^2 + 12^2 = 16^2$ oe or $16^2 - 12^2$ or 112 seen M1 for $\sqrt{256-144}$ or $\sqrt{112}$ (=10.58...) M1 for $\sin 40 = \dfrac{'10.58'}{CD}$ or $\cos 50 = \dfrac{'10.58'}{CD}$ M1 for $(CD =) \dfrac{'10.58'}{\sin 40}$ or $\dfrac{'10.58'}{\cos 50}$ A1 for 16.4 – 16.5 **OR** M1 for $BD^2 + 12^2 = 16^2$ oe or $16^2 - 12^2$ or 112 seen M1 for $\sqrt{256-144}$ or $\sqrt{112}$ (=10.58..) M1 for $(BC =)$ '10.58'× $\tan 50$ or $\dfrac{'10.58'}{\tan 40}$ (=12.6…) M1 for $\sqrt{'12.6'^2 + '10.58...'^2}$ A1 for 16.4 – 16.5

Question	Working	Answer	Mark	Notes
19	$\sqrt{\dfrac{8.5 \times 10^9 - 4 \times 10^8}{8.5 \times 10^9 \times 4 \times 10^8}}$ $= \sqrt{\dfrac{8.1 \times 10^9}{3.4 \times 10^{18}}}$ $= \sqrt{2.3823529... \times 10^{-9}}$ **OR** $\sqrt{\dfrac{1}{4 \times 10^8} - \dfrac{1}{8.5 \times 10^9}}$ $= \sqrt{2.5 \times 10^{-9} - 1.17647 \times 10^{-10}}$ $= \sqrt{2.3823529... \times 10^{-9}}$	4.9×10^{-5}	3	B3 for 4.88×10^{-5} to 4.9×10^{-5} (B2 for digits 238(23529) or 24 or 488(09353) or 49) (B1 for digits 81 or 34) **OR** B3 for 4.88×10^{-5} to 4.9×10^{-5} (B2 for digits 238(23529) or 24 or 488(09353) or 49) (B1 for digits 25 or 117(647))
20	$2d - 2t = 4t + 7$ $2d - 7 = 4t + 2t$ $2d - 7 = 6t$ $\dfrac{2d - 7}{6}$	$\dfrac{2d - 7}{6}$	3	B1 for $2d - 2t$ or $2t + \dfrac{7}{2}$ oe M1 for rearranging 4 terms correctly to isolate terms in t e.g. '$2d$' $- 7 = 4t + $ '$2t$' or $2d - 7 = 6t$ or $-6t = 7 - 2d$ seen A1 for $\dfrac{2d - 7}{6}$ oe
21	$4n^2 + 12n + 3^2 - (4n^2 - 12n + 3^2)$ $= 4n^2 + 12n + 9 - 4n^2 + 12n - 9$ $= 24n$ $= 8 \times 3n$	Proof	3	M1 for 3 out of 4 terms correct in expansion of either $(2n + 3)^2$ or $(2n - 3)^2$ **or** $((2n + 3) - (2n - 3))((2n + 3) + (2n - 3))$ A1 for $24n$ from correct expansion of both brackets A1 (dep on A1) for $24n$ is a multiple of 8 or $24n = 8 \times 3n$ or $24n \div 8 = 3n$

Question	Working	Answer	Mark	Notes
22	$a = 3$, $b = -4$, $c = -2$ $x = \dfrac{--4 \pm \sqrt{(-4)^2 - 4 \times 3 \times -2}}{2 \times 3}$ $= \dfrac{4 \pm \sqrt{16+24}}{6} = \dfrac{4 \pm \sqrt{40}}{6}$ $= 1.72075922$ or $= -0.3874258867$ OR $x^2 - \dfrac{4}{3}x - \dfrac{2}{3} = 0$ $\left(x - \dfrac{2}{3}\right)^2 - \left(\dfrac{2}{3}\right)^2 - \dfrac{2}{3} = 0$ $x - \dfrac{2}{3} = \sqrt{\left(\dfrac{2}{3}\right)^2 + \dfrac{2}{3}}$ $x = \dfrac{2}{3} \pm \sqrt{\dfrac{10}{9}}$	1.72, –0.387	3	M1 for $\dfrac{--4 \pm \sqrt{(-4)^2 - 4 \times 3 \times -2}}{2 \times 3}$ (condone incorrect signs for –4 and –2) M1 for $\dfrac{4 \pm \sqrt{40}}{6}$ or $\dfrac{2 \pm \sqrt{10}}{3}$ A1 for one answer in the range 1.72 to 1.721 and one answer in the range -0.387 to -0.38743 **OR** M1 for $\left(x - \dfrac{2}{3}\right)^2$ oe M1 for method leading to $\dfrac{2}{3} \pm \sqrt{\dfrac{10}{9}}$ oe A1 for one answer in the range 1.72 to 1.721 and one answer in the range -0.387 to -0.38743

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Question		**Working**	**Answer**	**Mark**	**Notes**
23	(a)(i)	Explanation : Each member of the population has an equal chance of selection	Each member of the population has an equal chance of selection	2	B1 for explanation
	(ii)	Description : Eg. number each student and use random select on a calculator	Valid method		B1 for an acceptable description
	(b)	239+257+248+190+206=1140 $\frac{239}{1140} \times 100$	21	2	M1 for $\frac{239}{'1140'} \times 100$ oe or 20.96… A1 cao

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Question		**Working**	**Answer**	**Mark**	**Notes**

24		$\dfrac{AC}{\sin 49} = \dfrac{8.7}{\sin 64}$
		
		 $AC = \dfrac{8.7}{\sin 64} \times \sin 49$
		
		 (= 7.305…)
		
		 $\dfrac{1}{2} \times 8.7 \times 7.305... \times \sin(180 - 64 - 49)$
			29.3	5	M1 for $\dfrac{AC}{\sin 49} = \dfrac{8.7}{\sin 64}$ oe
					
					 M1 for $(AC =)\dfrac{8.7}{\sin 64} \times \sin 49$
					
					 A1 for 7.3(05…)
					
					 M1 for $\dfrac{1}{2} \times 8.7 \times$ '7.305' $\times \sin(180 - 64 - 49)$
					
					 A1 for 29.19 – 29.3
					
					 OR
					
					 M1 for $\dfrac{BC}{\sin(180 - 64 - 49)} = \dfrac{8.7}{\sin 64}$ oe
					
					 M1 for $(BC =)\dfrac{8.7}{\sin 64} \times \sin'67'$
					
					 A1 for 8.9(10...)
					
					 M1 for $\dfrac{1}{2} \times 8.7 \times$ '8.910' $\times \sin 49$
					
					 A1 for 29.19 – 29.3
					
					 OR
					 (*X* is point such that *AX* is perpendicular to *BC*)
					 M1 for *AX* = 8.7×sin 49 (= 6.565…) **or**
					      XB = 8.7×cos 49 (= 5.707...)
					 M1 for *XB* = 8.7×cos 49 (= 5.707...) **and**
					      CX = '6.565' ÷ tan 64 oe (= 3.202…)
					 A1 for 8.9(10...) **or** 5.7(07...) and 3.2(02...)
					 M1 for ½ × '6.565…' × ('5.707' + '3.202') oe
					 A1 for 29.19 – 29.3

Question	Working	Answer	Mark	Notes
25	$\dfrac{12}{20} \times \dfrac{11}{19} + \dfrac{5}{20} \times \dfrac{4}{19} + \dfrac{3}{20} \times \dfrac{2}{19}$ $1 - \left(\dfrac{12}{20} \times \dfrac{11}{19} + \dfrac{5}{20} \times \dfrac{4}{19} + \dfrac{3}{20} \times \dfrac{2}{19} \right)$	$\dfrac{222}{380}$	4	B1 for $\dfrac{12}{19}$ or $\dfrac{5}{19}$ or $\dfrac{3}{19}$ (could be seen in working or on a tree diagram) M1 for $\dfrac{12}{20} \times \dfrac{5}{19}$ or $\dfrac{12}{20} \times \dfrac{3}{19}$ or $\dfrac{5}{20} \times \dfrac{12}{19}$ or $\dfrac{5}{20} \times \dfrac{3}{19}$ or $\dfrac{3}{20} \times \dfrac{12}{19}$ or $\dfrac{3}{20} \times \dfrac{5}{19}$ M1 for $\dfrac{12}{20} \times \dfrac{5}{19} + \dfrac{12}{20} \times \dfrac{3}{19} + \dfrac{5}{20} \times \dfrac{12}{19} + \dfrac{5}{20} \times \dfrac{3}{19} + \dfrac{3}{20} \times \dfrac{12}{19} + \dfrac{3}{20} \times \dfrac{5}{19}$ A1 for $\dfrac{222}{380}$ oe or 0.58(421...) **OR** B1 for $\dfrac{8}{19}$ or $\dfrac{15}{19}$ or $\dfrac{17}{19}$ M1 for $\dfrac{12}{20} \times \dfrac{8}{19}$ or $\dfrac{5}{20} \times \dfrac{15}{19}$ or $\dfrac{3}{20} \times \dfrac{17}{19}$ M1 for $\dfrac{12}{20} \times \dfrac{8}{19} + \dfrac{5}{20} \times \dfrac{15}{19} + \dfrac{3}{20} \times \dfrac{17}{19}$ A1 for $\dfrac{222}{380}$ oe or 0.58(421...) **OR** (continued overleaf…)

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Question	**Working**	**Answer**	**Mark**	**Notes**
25 contd				B1 for $\frac{11}{19}$ or $\frac{4}{19}$ or $\frac{2}{19}$ M1 for $\frac{12}{20} \times \frac{11}{19}$ *or* $\frac{5}{20} \times \frac{4}{19}$ *or* $\frac{3}{20} \times \frac{2}{19}$ M1 for $1 - \left(\frac{12}{20} \times \frac{11}{19} + \frac{5}{20} \times \frac{4}{19} + \frac{3}{20} \times \frac{2}{19} \right)$ A1 for $\frac{222}{380}$ oe or 0.58(421...) **NB** if decimals used they must be correct to at least 2 decimal places **SC : with replacement** B2 for $\frac{111}{200}$ oe **OR** e.g. B0 M1 for $\frac{12}{20} \times \frac{8}{20}$ *or* $\frac{5}{20} \times \frac{15}{20}$ *or* $\frac{3}{20} \times \frac{17}{20}$ M1 for $\frac{12}{20} \times \frac{8}{20} + \frac{5}{20} \times \frac{15}{20} + \frac{3}{20} \times \frac{17}{20}$ A0

Question		Working	Answer	Mark	Notes
26	(a)		$\mathbf{b} - \mathbf{a}$	1	B1 for $\mathbf{b} - \mathbf{a}$ or $-\mathbf{a} + \mathbf{b}$
	(b)	$\overrightarrow{OP} = \overrightarrow{OA} + \overrightarrow{AP}$ $\overrightarrow{AP} = \dfrac{3}{4} \times (\mathbf{b} - \mathbf{a})$ $\overrightarrow{OP} = \mathbf{a} + \dfrac{3}{4} \times (\mathbf{b} - \mathbf{a})$ OR $\overrightarrow{OP} = \overrightarrow{OB} + \overrightarrow{BP}$ $\overrightarrow{BP} = \dfrac{1}{4} \times (\mathbf{a} - \mathbf{b})$ $\overrightarrow{OP} = \mathbf{b} + \dfrac{1}{4} \times (\mathbf{a} - \mathbf{b})$	$\dfrac{1}{4}(\mathbf{a} + 3\mathbf{b})$	3	B1 for $\dfrac{3}{4} \times$ '$(\mathbf{b} - \mathbf{a})$' M1 for $(\overrightarrow{OP} =)\ \overrightarrow{OA} + \overrightarrow{AP}$ or $(\overrightarrow{OP} =)\ \overrightarrow{OA} + \dfrac{3}{4}\overrightarrow{AB}$ or $\mathbf{a} \pm \dfrac{3}{4} \times$ '$(\mathbf{b} - \mathbf{a})$' A1 for $\dfrac{1}{4}(\mathbf{a} + 3\mathbf{b})$ or $\dfrac{1}{4}\mathbf{a} + \dfrac{3}{4}\mathbf{b}$ **OR** B1 for $\dfrac{1}{4} \times$ '$(\mathbf{a} - \mathbf{b})$' M1 for $(\overrightarrow{OP} =)\ \overrightarrow{OB} + \overrightarrow{BP}$ or $(\overrightarrow{OP} =)\ \overrightarrow{OB} + \dfrac{1}{4}\overrightarrow{BA}$ or $\mathbf{b} \pm \dfrac{1}{4} \times$ '$(\mathbf{a} - \mathbf{b})$' A1 for $\dfrac{1}{4}(\mathbf{a} + 3\mathbf{b})$ or $\dfrac{1}{4}\mathbf{a} + \dfrac{3}{4}\mathbf{b}$