

Delta 3 – Unit 9 Revision Answers

Q1.

Question	Working	Answer	Mark	Notes
		$x = -\frac{2}{3}$	M1	for a method to eliminate one variable (condone one arithmetic error)
		$y = -2$	M1	(dep) for substituting found value in one of the equations or appropriate method after starting again (condone one arithmetic error)
			A1	$x = -\frac{2}{3}$ oe and $y = -2$

Q2.

PAPER: 1MA0/1H				
Question	Working	Answer	Mark	Notes
	$4x - 2y = 26$ $x - 2y = 11$ $3x = 15$ $2x - y = 13$ $2x - 4y = 22$ $3y = -9$	$x = 5$ $y = -3$	3	M1 for correct process to eliminate one variable (condone one arithmetic error) M1 (dep) for substituting found value in one of the equations or appropriate method after starting again (condone one arithmetic error) A1 for $x = 5$ and $y = -3$

Q3.

Question	Working	Answer	Mark	Notes
	$15x + 6y = 33$ $8x - 6y = 36$ $23x = 69$ $5 \times 3 + 2y = 11$ OR $x = \frac{11 - 2y}{5}$ $4 \times \left(\frac{11 - 2y}{5} \right) - 3y = 18$ $44 - 8y - 15y = 90$ $- 46 = 23y$ $y = -2$	$x = 3$ $y = -2$	4	M1 for coefficients of x or y the same followed by correct operation (condone one arithmetic error) A1 cao for first solution M1 (dep on M1) for correct substitution of found value into one of the equations or appropriate method after starting again (condone one arithmetic error) A1 cao for second solution OR M1 for full method to rearrange and substitute to eliminate x or y, (condone one arithmetical error) A1 cao for first solution M1 (dep on M1) for correct substitution of found value into one of the equations or appropriate method after starting again (condone one arithmetic error) A1 cao for second solution Trial and improvement 0 marks unless both x and y correct values found

Q4.

PAPER: 1MA0_2H				
Question	Working	Answer	Mark	Notes
	$3x + y = 30$ $x + 3y = 22$	8.50 4.50	4	M1 for forming two algebraic equations M1 for a correct process to eliminate one variable (condone one arithmetic error) M1 (dep) for substituting found value in one of the equations or appropriate method after starting again (condone one arithmetic error) A1 for 8.5(0) and 4.5(0)

Q5.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	-2, 4	B1	cao	
(b)	0.55 to 0.65, 3.35 to 3.45	M1	for correct method, eg marking intercepts with x -axis or one correct answer or both solutions given as a coordinate eg (0.6, 3.4) or (0.6, 0) (3.4, 0)	If answers are stated as coordinates, award M1 for both coordinates and M0 for one coordinate.
		A1	for answers in the ranges 0.55 to 0.65 and 3.35 to 3.45	With no extras

Q6.

Question	Answer	Mark	Mark scheme	Additional guidance
	$y = 3x - 6$	M1	for a correct method to find the gradient of the line, or $m = 3$ OR identifies -6 as the intercept in words or in a partial equation OR $y - b = m(x - a)$ where $m \neq 3$ and (a, b) is a correct coordinate	Just ringing -6 is insufficient
		M1	for $y = 3x + c$ or (L=) $3x - 6$ or $y = "3"x - 6$ OR $y - y_1 = 3(x - x_1)$ or $y - b = "3"(x - a)$ where (a, b) is a correct coordinate	Award of this mark implies the first M1 c must be seen either as a letter or a number
		A1	accept $y = 3x + -6$ oe	

Q7.

PAPER: IMA0_1H				
Question	Working	Answer	Mark	Notes
		$y = \frac{1}{2}x - 5$	3	M1 for method to find gradient of L_1 e.g. $\frac{6-3}{6-0}$ $\left(= \frac{1}{2} \right)$ M1 for $y = \frac{1}{2}x + c$ or $y = mx - 5$ (c, m do not have to be numerical, or correct numerical values) or for (L=) $\frac{1}{2}x - 5$ A1 $y = \frac{1}{2}x - 5$ oe

Q8.

PAPER: 5MB2H_01				
Question	Working	Answer	Mark	Notes
		$y = -\frac{1}{2}x + 2$	3	M1 for gradient = $-\frac{1}{m}$ or $-\frac{1}{2}$ M1 for substitution of $x = -2$, $y = 3$ into their $y = mx + c$ where c is a constant to be found A1 for $y = -\frac{1}{2}x + 2$ oe eg accept $2y + x = 4$

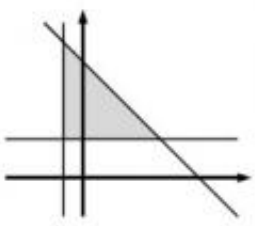
Q9.

Question	Working	Answer	Mark	Notes
		$y = \frac{1}{4}x + 5$	4	B1 for $m = -4$ M1 (indep) for gradient of perpendicular = $-\frac{1}{-4}$ or $\frac{1}{4}$ M1 (dep on previous M1) for substituting $x = -8$, $y = 3$ into $y = \frac{1}{4}x + c$ A1 for $y = \frac{1}{4}x + 5$ oe SC If M0 is scored then B2 for $y = -\frac{1}{4}x + 1$

Q10.

	Working	Answer	Mark	Notes
(a)		$y = 3x$	2	M1 for equation $y = 3x + k$ ($k \neq -4$) A1 for $y = 3x$
(b)		$y = -\frac{1}{3}x + 5$	2	M1 for gradient $-\frac{1}{3}$ A1 $y = -\frac{1}{3}x + 5$ oe

Q11.

PAPER: 5MB3H_01				
Question	Working	Answer	Mark	Notes
		Region identified	4	B1 for $x + y = 6$ or $x = -1$ or $y = 2$ drawn B1 for $x + y = 6$ and $x = -1$ and $y = 2$ drawn M1 for consistent shading (in or out) for any two of the lines $x + y = 6$, $x = -1$, $y = 2$ A1 lines drawn, and correct region identified by either shading in, or shading out; the letter R is not required, but necessary if no shading. Note: Lines may be solid or dotted/dashed etc

Q12.

Paper 1MA1:3H			
Question	Working	Answer	Notes
		Region R	M1 for one line correctly drawn M1 for two or more lines correctly drawn A1 for a correct region indicated between two correct lines A1 fully correct region indicated with all lines correct