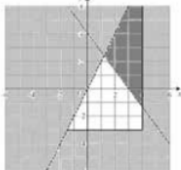


**Inequalities Graph Past Paper Answers Edexcel Maths GCSE**

**Higher- Calculator**

1.

Question	Working	Answer	Mark	AO	Notes
a	2 correct points plotted eg (0, 4) and (3, 0) $4x + 3y = 12$ drawn		2	AO1	M1 A1
b	Correct region 		3	AO1	B3 Correct region  B2 for $x = 4$ and $y = -3$ drawn <b>and</b> consistent shading correct for at least two inequalities  B1 for $x = 4$ and $y = -3$ drawn

2.

(a)	$(-2, -4), (-1, -1), (0, 2), (1, 5), (2, 8), (3, 11)$	correct line drawn from between $x = -2$ and $x = 3$	3	B3 For a correct line between $x = -2$ and $x = 3$ .  B2 If not B3, then B2 for: <ul style="list-style-type: none"> <li>at least 2 correct points plotted or</li> <li>for a line passing through at least 2 correct points or</li> <li>for a line drawn with positive gradient through (0,2) and clear intention to use a gradient of 3 (eg. a line through and (0, 2) and (0.5, 5))</li> </ul> B1 If not B2 then B1 for: <ul style="list-style-type: none"> <li>at least 2 correct points stated (may be in a table) or</li> <li>for a line drawn with a positive gradient through # (0, 2) or</li> <li>for a line with gradient 3.</li> </ul>
(b)				M1 ft for a point marked above their $y = 3x + 2$ if at least B1 scored in (a) or for a point to the right of $x = 2$

3.

question	Working	Answer	Mark	Notes
(a)		3, 4	1	B1
(b)		see graph at end of mark scheme	3	B3 for correct region identified  If not B3 then award B2 for $x + y = 4$ drawn (with no additional lines drawn) and a region identified that satisfies at least 3 of the 5 given inequalities  If not B2 then award B1 for line $x + y = 4$ drawn  NB. May shade wanted or unwanted regions; lines may be solid or dashed

4.

				M1 for either $y = 2x + 1$ or $x + y = 10$ drawn correctly
				M1 for all lines drawn correctly
		Correct region	3	A1 for all 3 lines correct and the region identified Lines may be full lines or broken lines
				<b>Total 3 marks</b>

5.

question	Working	Answer	Mark	Notes
(a)		Correct line drawn	2	B2 Must be a single straight line passing through at least 3 of (0,4) (2,3) (4,2) (6,1) (8,0) (10,-1) If not B2 then B1 for a single straight line with a negative gradient passing through either (0,4) or (8,0) or at least 3 of (0,4) (2,3) (4,2) (6,1) (8,0) (10,-1) plotted or calculated
(b)		$x = 2$ drawn $y = 1$ drawn Correct region identified	3	B1 B1 B1 Ignore extra lines Accept R shaded or R' shaded. Condone omission of label R
				<b>Total 5 marks</b>

6.

(a)		$x=3, y=2$	1	B1	cao
(b)	<p><b>Use of gradient and</b> <math>y = mx + c</math>                      or clear attempt to use  <math>\frac{\text{vertical difference}}{\text{horizontal difference}}</math> eg <math>\frac{2}{3}</math> oe                      (ignore omission of - sign)</p> <p><b>or</b> for <math>3y = 12 - 2x</math> <b>or</b> <math>3y = -2x + 12</math></p> <p><b>or</b> for <math>y = \frac{12 - 2x}{3}</math> oe</p> <p><b>or</b> gradient = <math>\frac{2}{3}</math> stated or used</p>		4	M1	Throughout question accept $\frac{2}{3}$ written as a decimal rounded or truncated to 2 or more decimal places
	(grad =) $-\frac{2}{3}$ oe or $y = 4 - \frac{2}{3}x$ oe			A1	
	$y = -\frac{2}{3}x + c$ <b>or</b> for $y = -\frac{2}{3}x + c$ where $c \neq 10$ <b>or</b> $-\frac{2}{3}x + 10$ , $-\frac{2}{3}x + 10$ , $L = -\frac{2}{3}x + 10$ etc			M1	ft from $-\frac{2}{3}$
	$y = -\frac{2}{3}x + 10$ oe <b>or</b> $2x + 3y = 30$ oe <b>or</b> $y = -\frac{2}{3}x + 10$ oe			A1	ft from $-\frac{2}{3}$

(b)	<p><b>Alternative scheme:</b>  <b>Use of</b> <math>2x + 3y = k</math></p> <p><math>2x + 3y = k</math></p> <p><math>2 \times 0 + 3 \times 10 (=k)</math></p> <p><math>k = 30</math></p>		4	M1	
				M1	Substitution of (0, 10) into $2x + 3y = k$
				A1	
		$2x + 3y = 30$ oe		A1	
(c)	(1,1) (1,2) (1,3) (2,2) marked	2	B2	B1 for 3 correct points marked and none wrong	
				<b>or</b> for all correct points and either one or more of points on $y$ axis ie. (0,-1) (0,0) (0,1) (0,2) (0,3) (0,4) points on $y = x - 1$ ie (0,-1) (1,0) (2,1) (3,2)	
<b>Total 7 marks</b>					