

Rhanbarthau Graff

1.

Ar y papur sgwariau sydd wedi'i ddarparu, lluniadwch (*draw*) y rhanbarth sy'n bodloni pob un o'r anhafaleddau canlynol.

$$\begin{aligned}y &\leq 8 \\x + y &\geq 2 \\y &\geq 2x - 4\end{aligned}$$

Gwnewch yn siŵr eich bod yn dangos yn glir y rhanbarth sy'n cynrychioli eich ateb.

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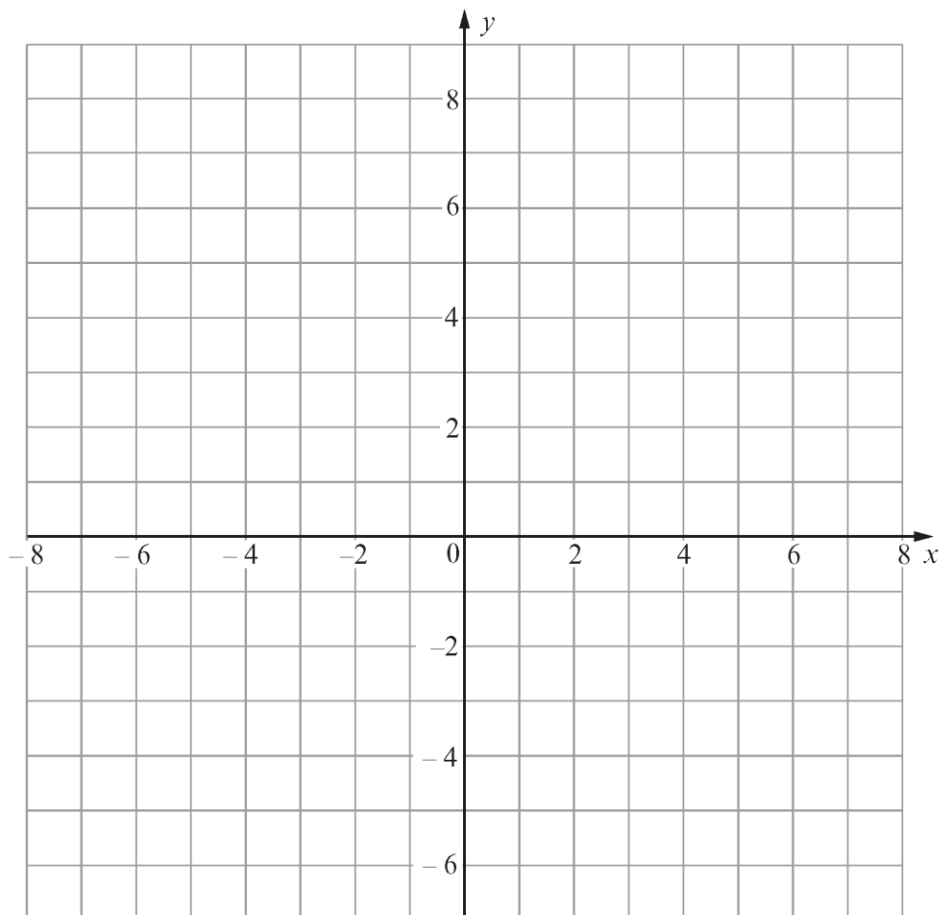
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2.

Ar y grid isod, lluniadwch y rhanbarth sy'n bodloni pob un o'r anhafaleddau canlynol.

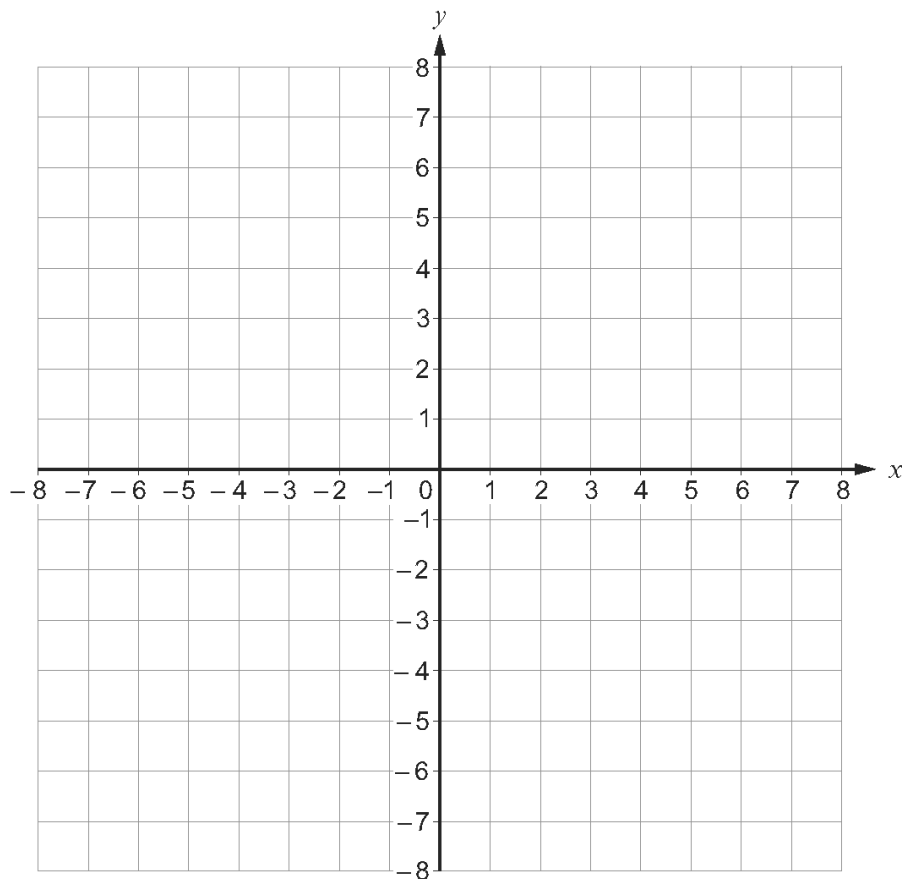
$$x \geq -5$$

$$y \leq 3$$

$$y - x + 2 \geq 0$$

Rhaid i chi ddangos yn glir y rhanbarth sy'n cynrychioli eich ateb.

[4]



3.

(a) Mae rhywun wedi gofyn i Rafi beintio rhanbarth ar grid cyfesurynnau. Mae e'n cael y meini prawf canlynol.

Rhaid i'r rhanbarth fod o'r fath fel bod

- $y \leq x$
- $x \leq 1$
- $y \geq -2$

Defnyddiwch y grid isod i ddangos y rhanbarth mae angen i Rafi ei beintio.

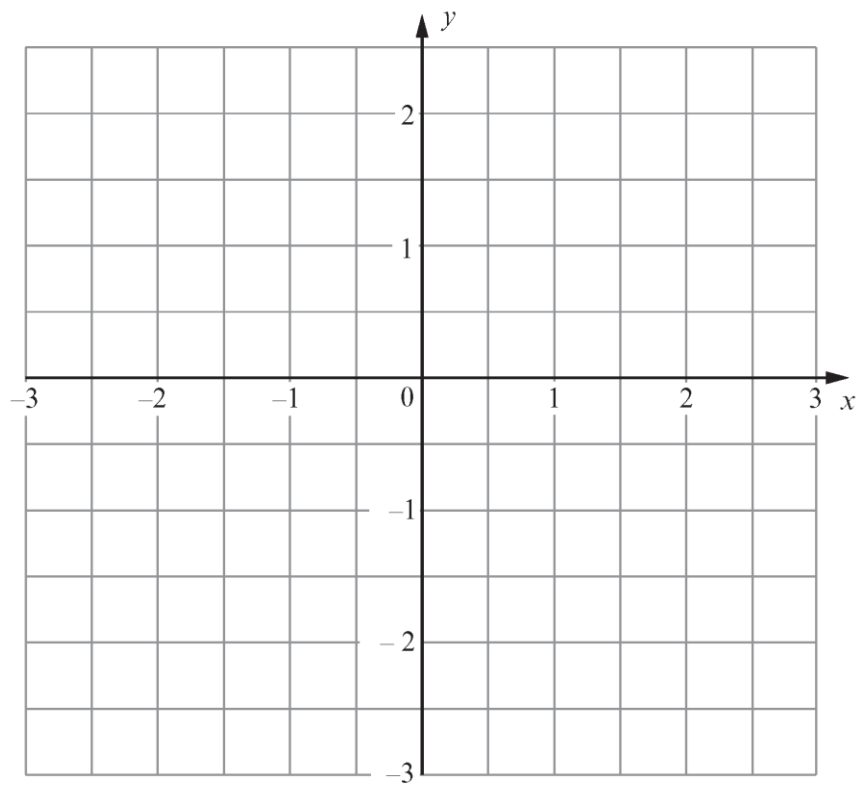
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4.

Mae gan beiriant torri ddau osodiad (*settings*), x ac y .

Ar gyfer diogelwch wrth weithredu'r peiriant torri, rhaid i'r gosodiadau x ac y gael eu dewis yn y fath fodd fel bod yr anhafaleddau isod i gyd yn cael eu bodloni.

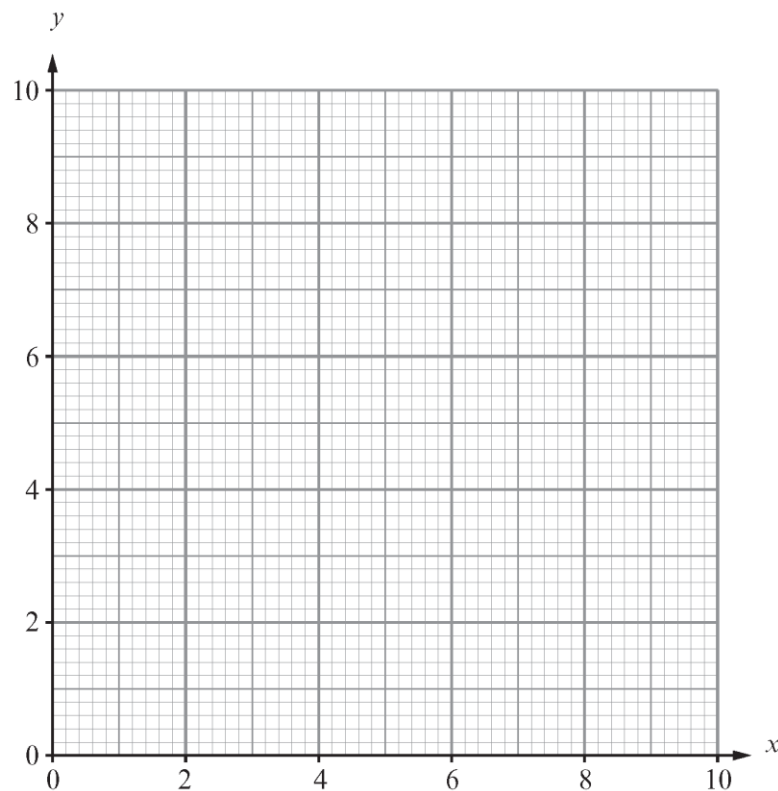
$$x + y < 8$$

$$5x + y > 10$$

$$2y - x > 4$$

- (a) Defnyddiwch y papur graff isod i nodi'r rhanbarth sy'n dangos gosodiadau diogel x ac y ar gyfer y peiriant torri.

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[3]

- (b) Ysgrifennwch set o osodiadau diogel posibl ar gyfer y peiriant torri.

$x = \dots\dots\dots$ ac $y = \dots\dots\dots$

[1]

5.

- (a) Ar y papur graff isod, lluniadwch (*draw*) y rhanbarth sy'n bodloni **pob un** o'r anhafaleddau canlynol.

$$\begin{aligned} x + y &\geq 3 \\ y &\leq -2x + 6 \\ y &\leq 2 \end{aligned}$$

Gwnewch yn siŵr eich bod yn dangos yn glir y rhanbarth sy'n cynrychioli eich ateb. [3]

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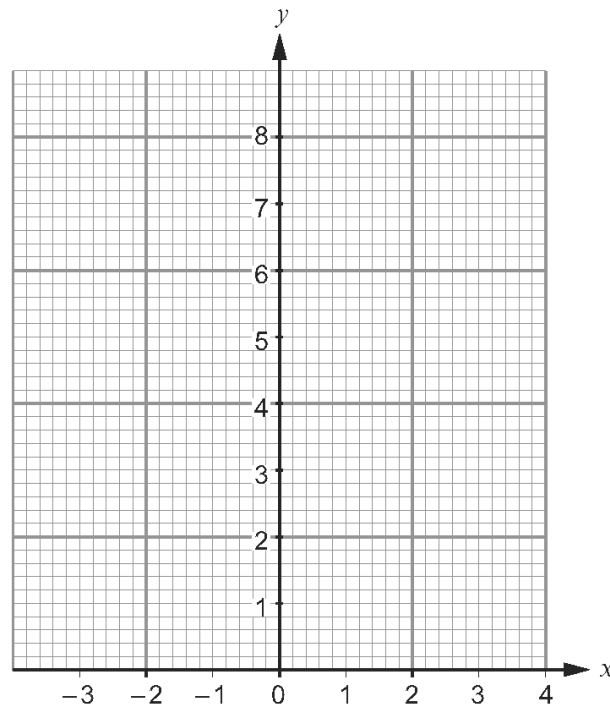
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- (b) Ydy pob un o'r pwyntiau sy'n cael eu rhestru yn y tabl isod o fewn y rhanbarth? Cwblhewch y tabl drwy nodi ydy neu nac ydy. [1]

Pwynt gyda'r cyfesurynnau	O fewn y rhanbarth, ydy neu nac ydy?
(2, 1.5)	
(2, 2)	
(2, 2.5)	

6.

Darganfyddwch werthoedd x ac y sy'n uchafu (*maximise*) gwerth $x + y$, yn amodol ar (*subject to*) y cyfyngiadau canlynol.

$$\begin{aligned} x &\geq 0 \\ y &\geq 0 \\ 5y &\geq 7x - 14 \\ x + 2y &\leq 14 \\ 3x + 2y &\leq 18 \end{aligned}$$

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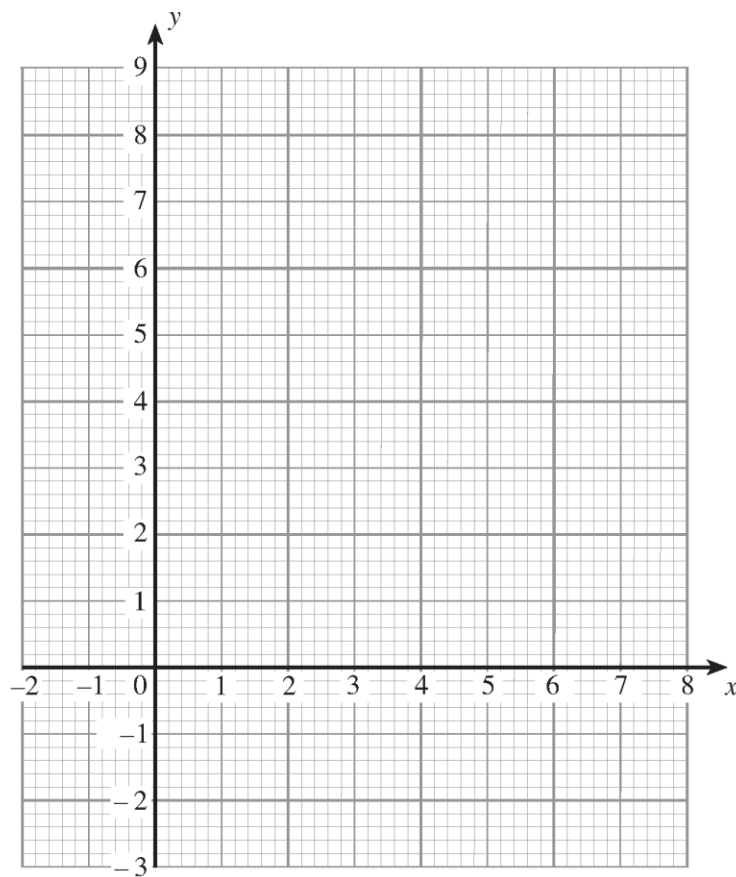
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[6]



7.

Ar y papur sgwariau isod, lluniadwch y rhanbarth sy'n bodloni pob un o'r anhafaleddau canlynol.

$$x \leq 7$$

$$x + y \geq 6$$

$$y \leq \frac{x}{2}$$

Gwnewch yn siŵr eich bod chi'n dangos yn glir y rhanbarth sy'n cynrychioli eich ateb. [3]

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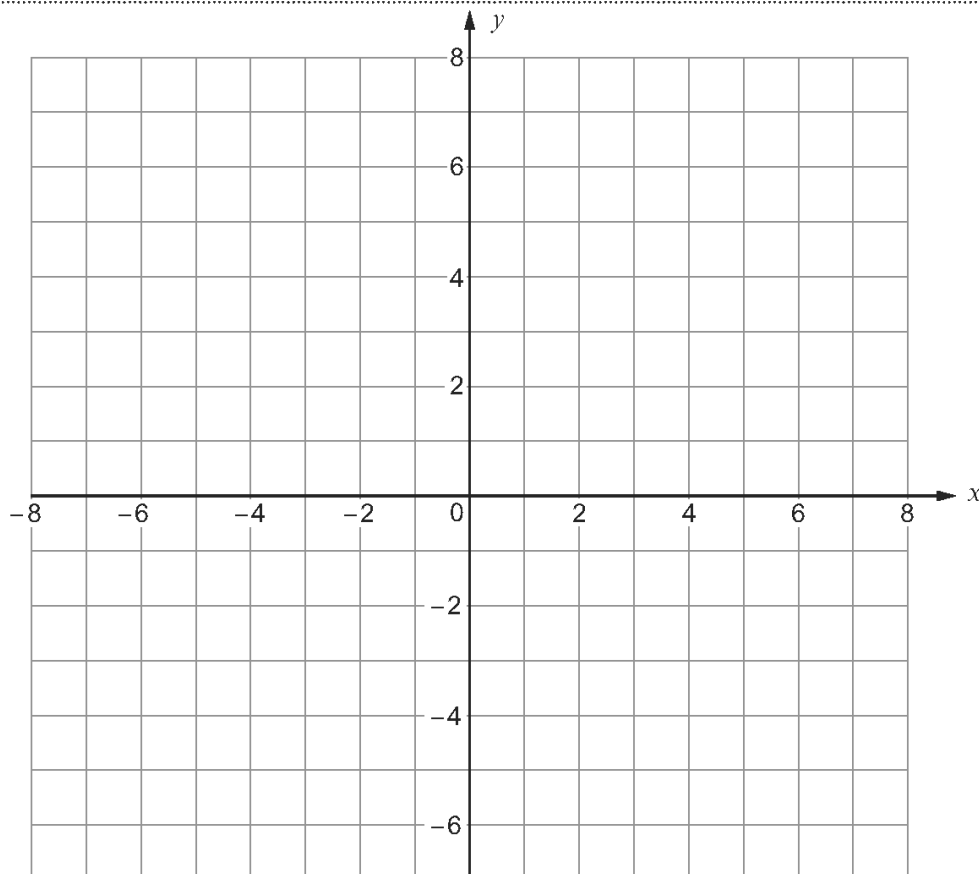
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8.

Ar y papur graff sydd wedi'i ddarparu, lluniadwch y rhanbarth sy'n bodloni **pob un** o'r anhafaleddau canlynol.

$$\begin{aligned}x + y &\leq 6 \\ y &\leq 3x + 1 \\ y &\geq 2\end{aligned}$$

Gwnewch yn siŵr eich bod yn dangos yn glir y rhanbarth sy'n cynrychioli eich ateb.

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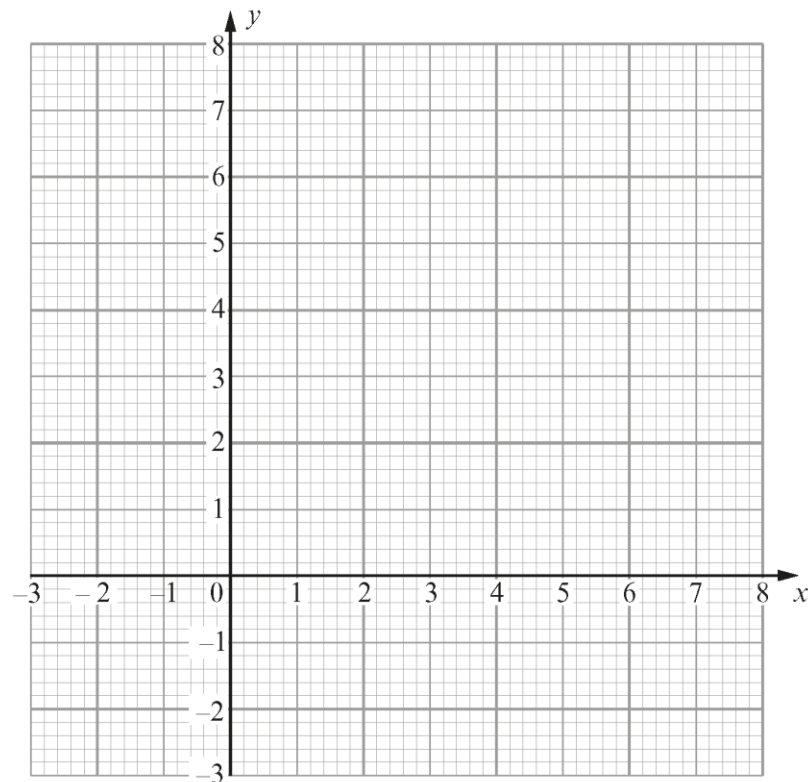
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9.

Gan ddefnyddio'r echelinau isod, darganfyddwch y rhanbarth sy'n bodloni'r anhafaleddau canlynol.

$$\begin{aligned}x &\leq 1 \\y &\geq -2 \\y &\leq 2x - 1 \\y + x &\leq 0\end{aligned}$$

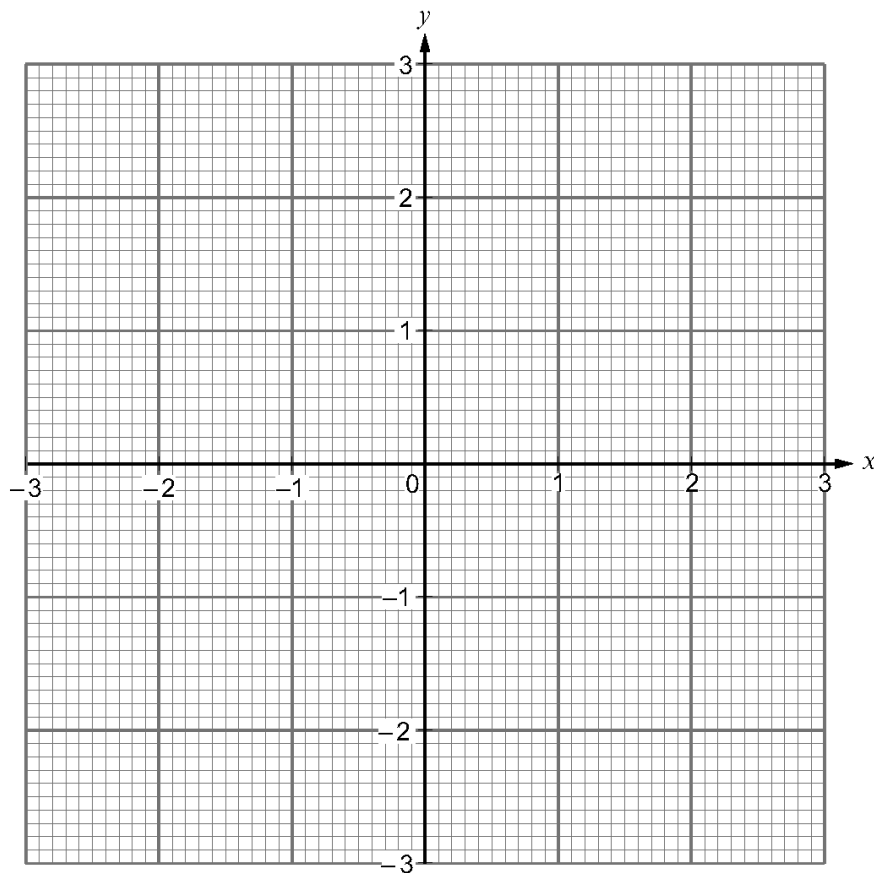
Gwnewch yn siŵr eich bod chi'n dangos yn glir y rhanbarth sy'n cynrychioli eich ateb. [4]

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10.

Rydych chi'n gwybod bod hyd petryal yn 40cm neu lai.
 Rydych chi'n gwybod bod lled y petryal 10cm yn fyrrach na hyd y petryal.

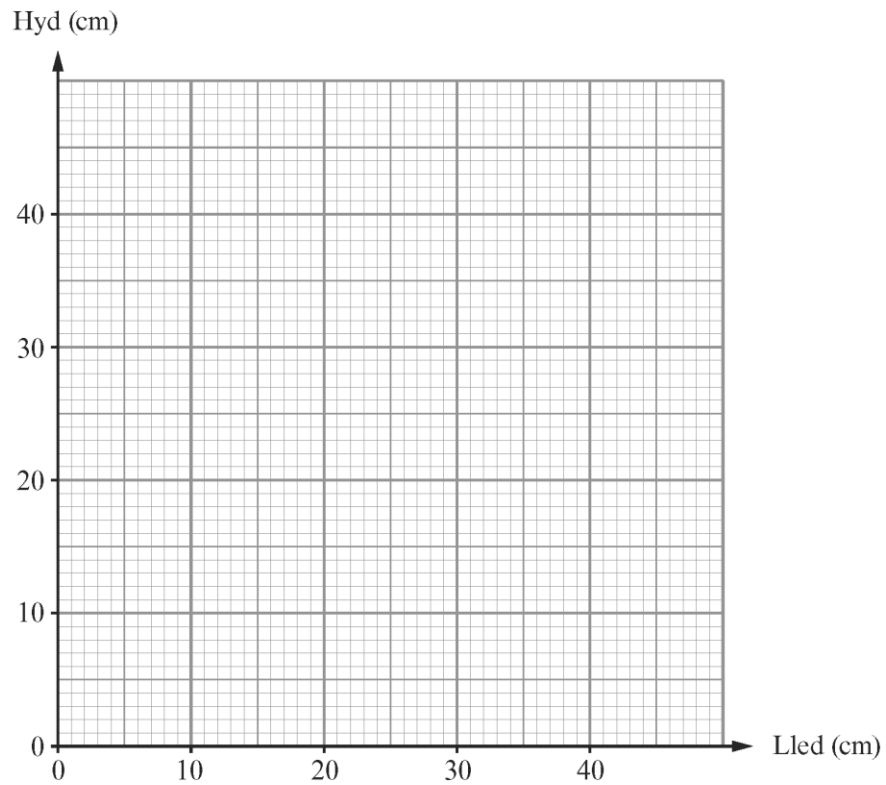
(a) Lluniadwch (*draw*) graff i ddarlunio'r wybodaeth hon.

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(b) A ddylai eich graff gyffwrdd ag un neu'r llall o'r echelinau?
 Eglurwch eich ateb.

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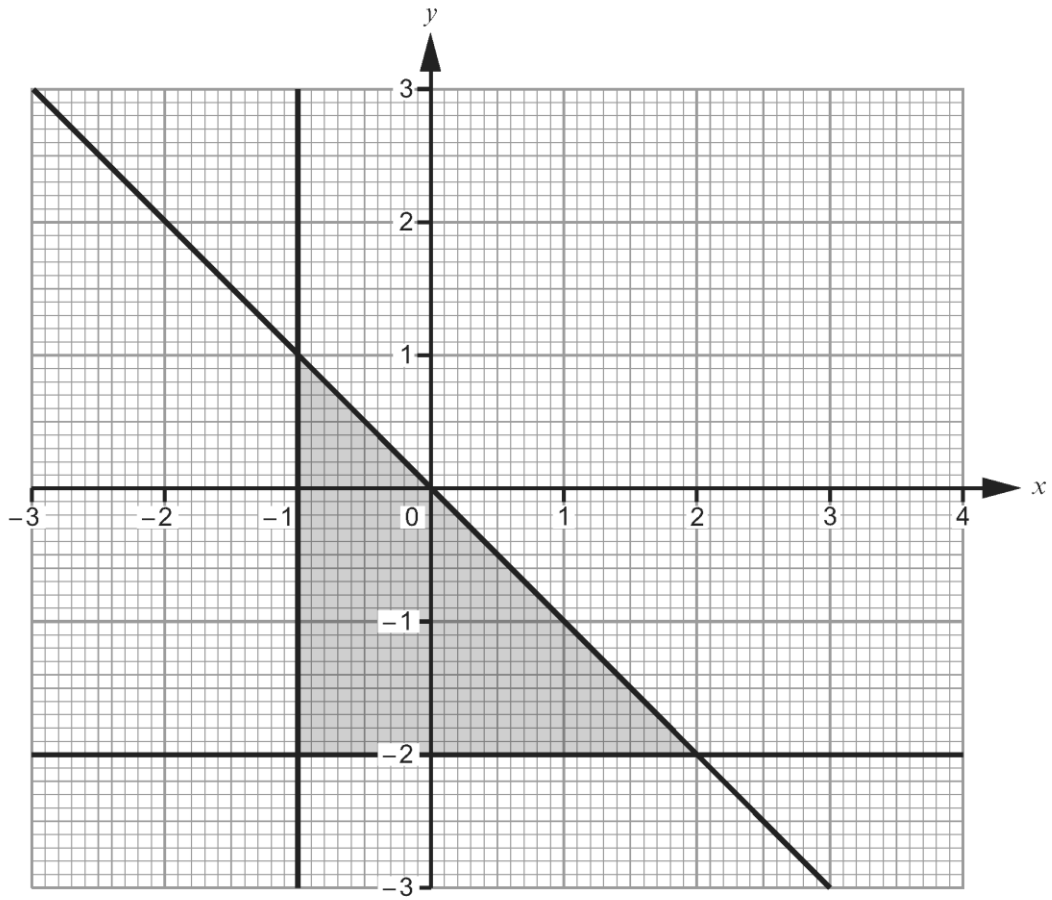
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11.



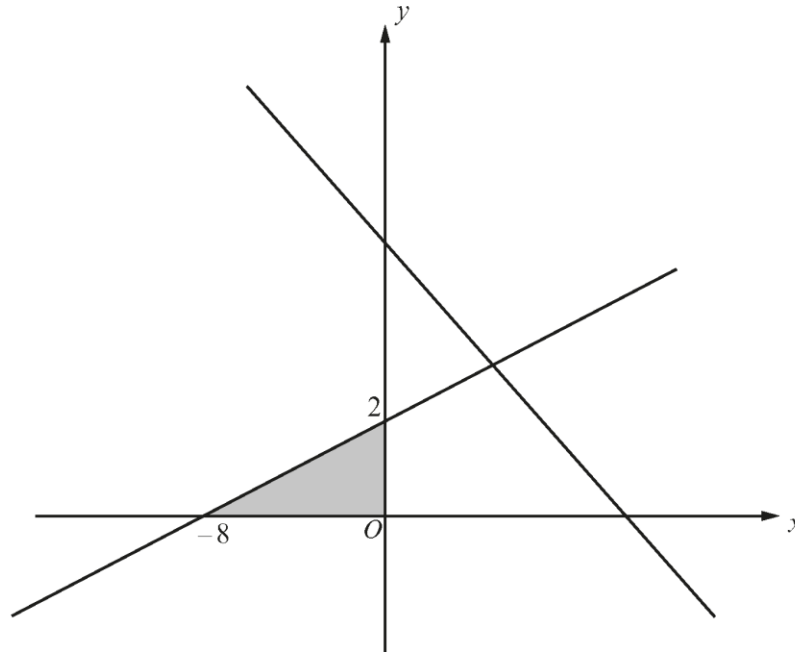
Cwblhewch y tabl canlynol i roi'r set o anhafaleddau sy'n disgrifio'r rhanbarth sydd wedi'i dywyllu uchod. [3]

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$y \geq -2$

12.

- (a) Mae Mel yn dylunio logo newydd ar gyfer ei chwmmi. Mae hi'n dechrau gydag echelin- x ac echelin- y . Mae hi'n braslunio dwy linell syth ac yn tywyllu (*shades*) rhanbarth. Bydd y siâp hwn yn dod yn rhan o logo'r cwmni.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Darganfyddwch y tri anhafaledd sy'n diffinio'r rhanbarth sydd wedi'i dywyllu.

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[6]

Cynllun Marcio

1.

9. Any two lines drawn correctly Correct region identified	B2 B1	B1 for any 1 line drawn correctly CAO
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2.

Unit 2 GCSE Maths June 2015 Higher Tier	T I C K	M A R K	Comment
9. Sight of line for either $x = -5$ or $y = 3$ Correct line drawn for $y - x + 2 = 0$ ($y = x - 2$) Correct region clearly identified		B1 B2 B1	Accept an unlabelled correct line provided unambiguous (e.g. the only vertical or horizontal line). Accept dotted lines throughout question. B1 for correct gradient (= 1) OR correct y-intercept plotted (0, -2) OR correct x-intercept plotted (2, 0) OR any two other points calculated or plotted correctly (with no incorrect points) FT for their lines (for equivalent difficulty)

3.

6(a) Any 2 lines drawn correctly Correct region identified	B2 B1	B1 for any 1 line drawn correctly Allow where ambiguous x or y as 1 or -2 unless incorrect line uniquely selected. Allow any line as correct if selected as a side of the region CAO
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4.

10.(a) Any 2 of the lines $x+y=8$, $5x+y=10$ and $2y-x=4$ drawn correctly Correct region identified	B2 B1	B1 for any 1 line correct CAO
(b) x and y selected <u>within</u> their region	B1	Not on the lines. FT their identified region. If a closed region is formed but not shaded, accept a point within their closed area within the three lines drawn or by two lines with the inclusion of axes. Not for a non identified open region via extension of the graph paper If no region selected accept any possible correct points, e.g. (2, 4)

5.

Linear GCSE Mathematics Higher Tier November 2015 Paper 1		FINAL MARK SCHEME Comments
8(a) Any 2 of the lines: $x+y=3$, $y=-2x+6$, $y=2$ correct Correct region shaded	B2 B1	B1 for any 1 correct line CAO
(b) Yes, Yes, No	B1 4	CAO (No FT). Independent mark from 8(a)

6.

10. Overall idea, working in the quadrant shown to find a region and technique for solution of the problem Any 2 of the lines $5y=7x-14$, $x+2y=14$ and $3x+2y=18$ drawn correctly Correct region identified from all correct lines Use of $x+y=...$ OR solution of $x+2y=14$ & $3x+2y=18$ Maximised when $x=2$ and $y=6$	S1	B1 for 1 line CAO. May be implied by further work in maximising FT for their identified region FT for their identified region
	B2	
	B1	
	M1	
	A1	
	6	

7.

2015 Summer Linear Paper 2 Higher Tier		Comments
13. Any two lines drawn correctly Correct region identified	B2 B1	B1 for any 1 line drawn correctly CAO

8.

9. Any 2 of the lines $x+y=6$, $y=3x+1$ and $y=2$ correct Correct region shaded	B2	B1 for any 1 correct line If $y=2$ and $x=2$ are both shown do not award a mark unless $y=2$ is selected for the region or clearly labelled CAO. Accept indication by 'shading out'
	B1	

9.

Unit 2 GCSE Maths November 2015 Higher Tier	M A R K	FINAL MARK SCHEME Comment
10. $x=1$ AND $y=-2$ plotted. $y=2x-1$ plotted. $y=-x$ plotted. Correct region identified.	B1 B1 B1 B1 4	FT their lines provided at least two lines correct (including at least one of $y=2x-1$ and $y=-x$) and four lines are drawn.

10.

10.(a) Any two points correct, with no incorrect points Correct straight line drawn from (but not beyond) (30,40) inclusive to (0,10) exclusive (b) Explanation of implied NO, e.g. 'not possible to have a rectangle with zero lengths'	M2	Accept (0, 10) as one of the points with 1 other point, provided no other incorrect points plotted M1 any one point correct provided no incorrect points plotted, do not accept (0, 10), OR M1 for any 2 correct points not including (0,10) Accept indication for lots and lots of points between. Accept to (0, 10) but not beyond
	A1	
	E1	
	4	

11.

$x \geq -1$ or equivalent $y \leq -x$ or equivalent	B1 B2 3	Accept '>' Accept '<'. B1 for $y = -x, y > -x, y \geq -x$ or B1 for $y \leq -kx (+0)$, with $k > 0$ or B1 for $y \leq x$.
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12.

5.(a) $y \geq 0$ or $y > 0$ $x \leq 0$ or $x < 0$ For straight line: $c = 2$ Gradient is $2/8 (= 1/4)$ $y \leq x/4 + 2$ or $y < x/4 + 2$ or equivalent	B1 B1 B1 B1 B2	Do not ISW, but then FT gradients of $-1/4, 4$ and -4 Accept unsimplified gradient for B2 or B1 FT their gradient ($\pm 1/4, \pm 4$) for m, do not FT c B1 for $y \dots x/4 + 2$ or equivalent, with $>, \geq$ or $=$
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