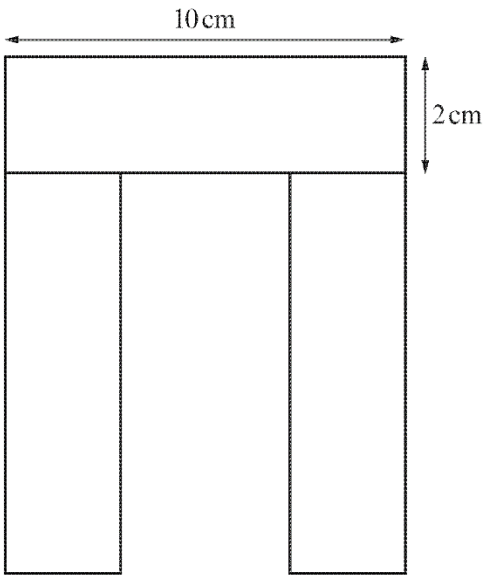
Siapiau Cyfansawdd

1.

Mae tri phetryal unfath *(identical)*, gyda phob un yn 10 cm wrth 2 cm, yn cael eu gosod i wneud y siâp sy'n cael ei ddangos yn y diagram.



Nid yw'r diagram wedi'i luniadu wrth raddfa

(a) Cyfrifwch berimedr y siâp.

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[3]

(b) Cyfrifwch arwynebedd y siâp.
Ysgrifennwch unedau eich ateb.

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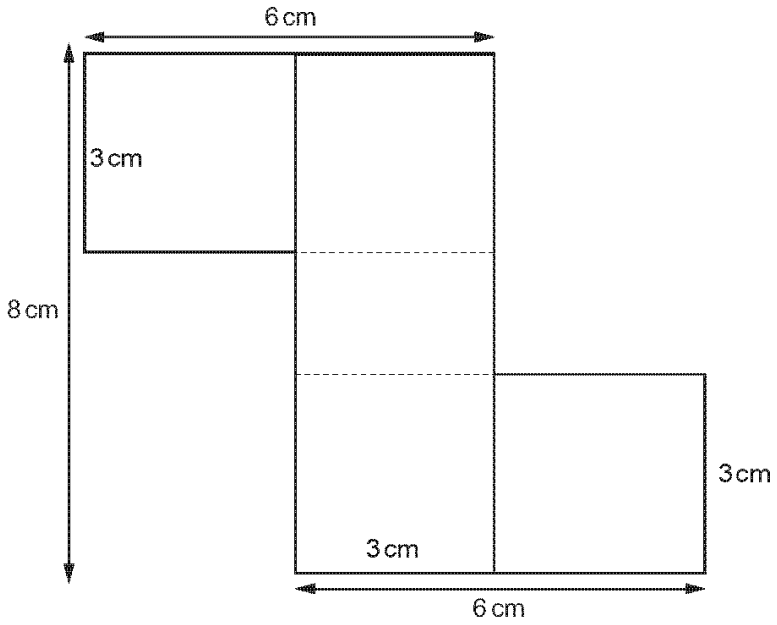
[3]

2.

Mae petryal 8 cm wrth 3 cm yn cael ei osod ar ben dau betryal 6 cm wrth 3 cm i wneud y siâp sy'n cael ei ddangos yn y diagram.



Nid yw'r diagram wedi'i luniadu wrth raddfa

(a) Cyfrifwch berimedr y siâp. [3]

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(b) Cyfrifwch arwynebedd y siâp.
Ysgrifennwch unedau eich ateb. [3]

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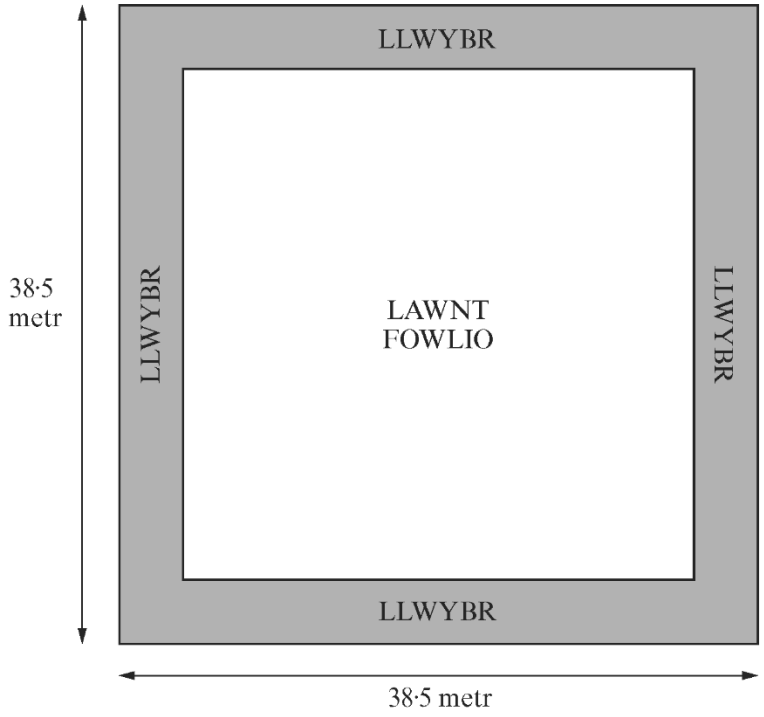
3.

Penderfynodd y cyngor lleol osod llwybr concrit â'i led yn $1\frac{1}{2}$ metr o amgylch eu lawnt fowlio *(bowling green)*, fel sy'n cael ei ddangos yn y diagram.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Cyfrifwch arwynebedd y llwybr concrit, mewn metrau sgwâr.

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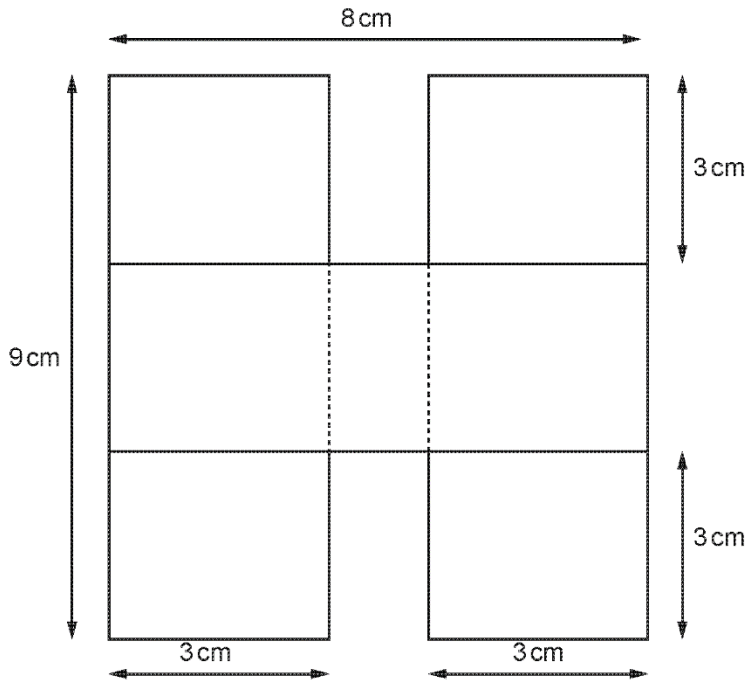
[6]

4.

Mae dau betryal, gyda phob un yn 9 cm wrth 3 cm, a phetryal gorymylol *(overlapping)*, 8 cm wrth 3 cm, yn cael eu gosod fel eu bod yn gwneud y siâp H sy'n cael ei ddangos yn y diagram.



Nid yw'r diagram wedi'i luniadu wrth raddfa

(a) Cyfrifwch berimedr y siâp. [3]

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(b) Cyfrifwch arwynebedd y siâp.
Ysgrifennwch unedau eich ateb. [3]

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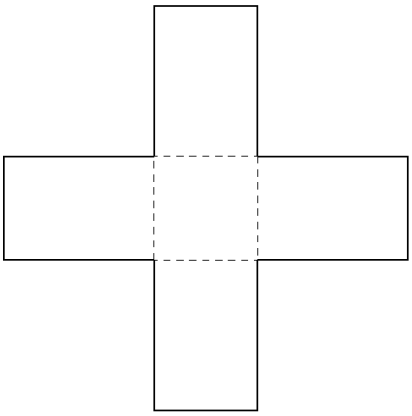
5.

Mae patrwm sydd â siâp croes yn cael ei wneud drwy drefnu pedwar petryal unfath *(identical)* o amgylch ochrau sgwâr, fel sy'n cael ei ddangos yn y diagram isod.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Arwynebedd y sgwâr yw 36 cm^2.
Mae arwynebedd pob petryal unwaith a hanner cymaint ag *(one and a half times)* arwynebedd y sgwâr.

Darganfyddwch berimedr y patrwm sydd â siâp croes.
Dangoswch eich holl waith cyfrifo a **nodwch unedau eich ateb**. [5]

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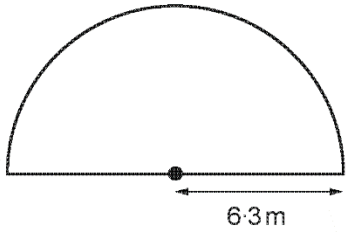
6.

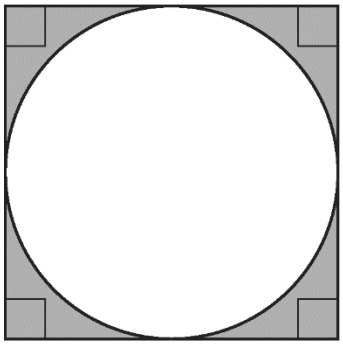
Mae gan gwmni hanner cylch mawr fel rhan o'i logo.
Mae'r cwmni'n bwriadu peintio'r logo ar un o waliau ei bencadlys *(headquarters)*.
Mae un tun o baent yn peintio 15 m^2.

Cyfrifwch nifer y tuniau o baent mae angen i'r cwmni eu prynu i beintio hanner cylch sydd â'i radiws yn 6·3 m ar y wal. [4]



Nid yw'r diagram wedi'i luniadu wrth raddfa

7.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Yn y diagram uchod, diamedr y cylch yw 12 cm.
Cyfrifwch arwynebedd y rhan sydd wedi'i thywyllu.

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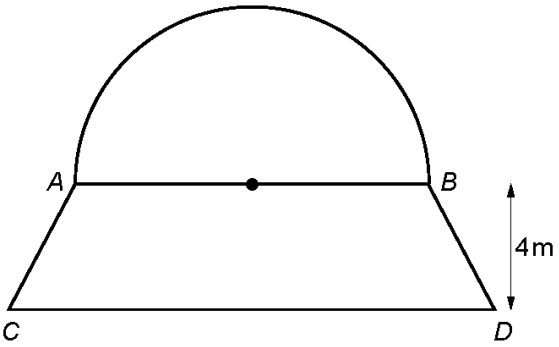
[4]

8.

Mae cwmni sy'n noddi cystadleuaeth chwaraeon yn bwriadu peintio ei logo ar y cae.

Mae'r logo ar siâp hanner cylch ar ben trapesiwm fel sy'n cael ei ddangos isod.

Mae AB = 10 m, mae CD = 16 m ac uchder y trapesiwm yw 4 m.



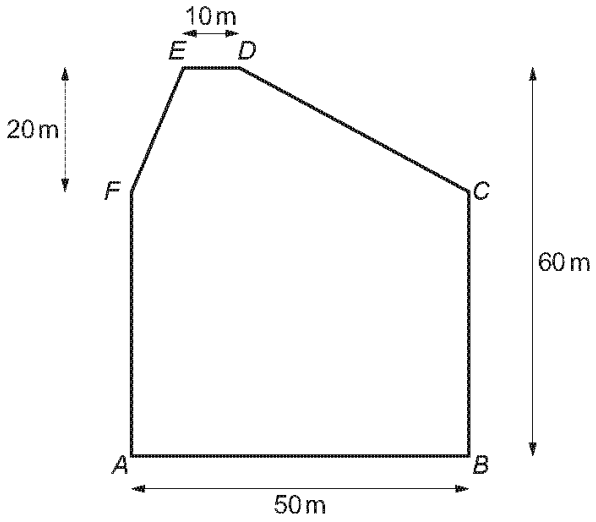
Nid yw'r diagram wedi'i luniadu wrth raddfa

Mae'r cwmni wedi prynu digon o baent i beintio arwynebedd o 125 m^2.

Pa ganran o'r paent hwn bydd ei angen i beintio arwynebedd y logo? [6]

9.

Mae dimensiynau cae chwarae *ABCDEF* yn cael eu dangos yn y diagram isod.



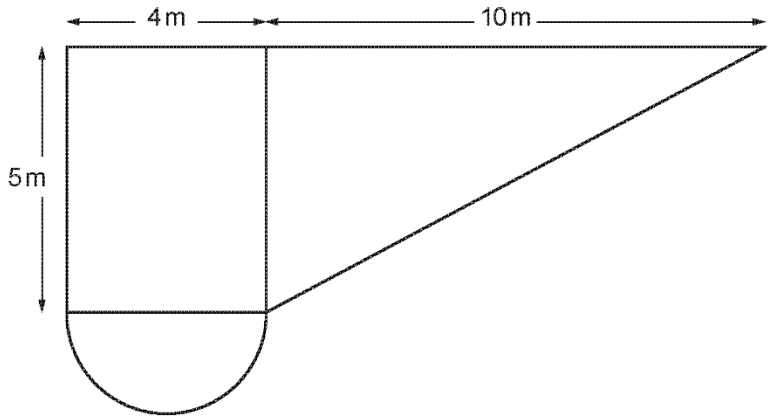
Nid yw'r diagram wedi'i luniadu wrth raddfa

Petryal yw *ABCF* ac mae'r ochrau *AB* ac *ED* yn baralel.

Cyfrifwch arwynebedd y cae chwarae. [4]

10.

Mae logo cwmni yn cael ei ddangos ar y tu allan i wal ei ffatri.
Mae siâp y logo yn cael ei wneud gan ddefnyddio petryal, triongl ongl sgwâr a hanner cylch, fel sy'n cael ei ddangos yn y diagram isod.
Mae rhai o'r hydoedd yn cael eu dangos yn y diagram.



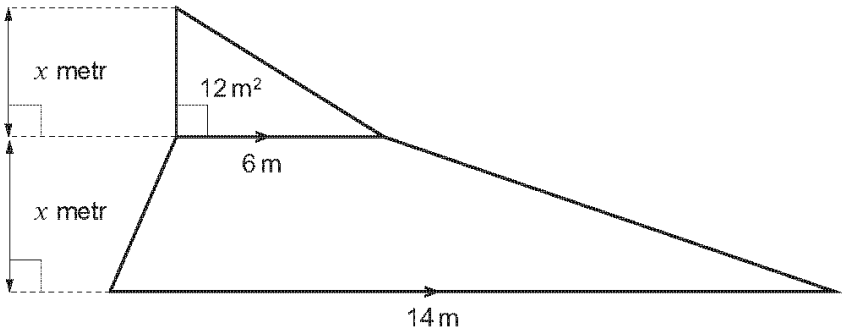
Nid yw'r diagram wedi'i luniadu wrth raddfa

Cyfrifwch arwynebedd cyfan y logo hwn. Rhowch eich ateb yn gywir i 1 lle degol. [5]

11.

Mae'r diagram yn dangos hwyl *(sail)*.
Triongl yw rhan uchaf yr hwyl, ac uchder perpendicwlar y triongl yw x metr.
Trapesiwm yw rhan isaf yr hwyl ac uchder perpendicwlar y trapesiwm yw x metr.

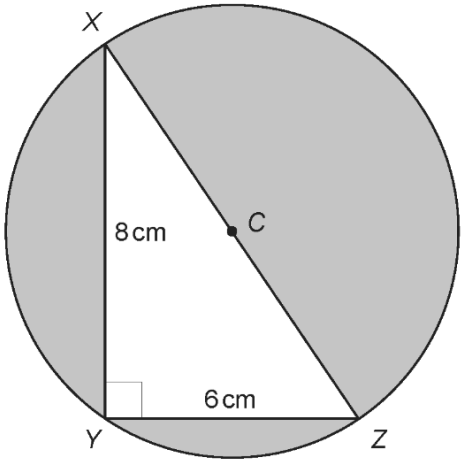
Arwynebedd y triongl yw 12 m^2.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Cyfrifwch arwynebedd y trapesiwm. [4]

12.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Diamedr y cylch yw XZ. Mae canol y cylch yn C.
Triongl ongl-sgwâr yw XYZ.
Mae $XY = 8$ cm ac $YZ = 6$ cm.
Cyfrifwch:

- radiws y cylch,
- arwynebedd cyfan y rhanbarthau sydd wedi'u tywyllu. [7]

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Cynllun Marcio

1.

5. (a) Missing side segment = 6 Perimeter = 10+2+10+2+10+6+10+2+10+2 = 64 (cm) 5. (b) Area = 3 × 10 ×2 = 60 cm^2	S1 M1 A1 M1 A1 U1 6	**This may be implied by some correct methods** Attempt to add all sides of the shape C.A.O. OR equivalent C.A.O. Independent of all other marks. **Watch out as the area of the 'gap' is also 60.**

2.

2015 Summer Linear Paper 1 (Non calculator) Foundation Tier	**Marks**	**Comments**
To be viewed with diagram 6. (a) Missing inside segments = 2 or 5 (and 3) Perimeter = 6+3+2+3+3+6+3+2+3+3 = 34 (cm)	S1 M1 A1	One 2 or 5 in correct place gets S1 Attempt to add all sides of the shape FT 'their 2' for possible M1 If the 2 is not shown on diagram but is in the sum of sides for the perimeter then award S1 here. C.A.O
To be viewed with diagram 6. (b) Area = 6×3+2×3+6×3 OR 3×3 + 3×8 + 3×3 OR 4×3×3 + 3×2 = 42 cm^2	 M1 A1 U1	**You must check the diagram and their value for '2' or '5' in their part (a)** Attempt to add all areas of the shape F.T. if missing sides (even incorrect) are clearly indicated Independent of all other marks.

3.

8. Area of whole = 38.5^2 = 1482.25 One Dimension of green = 35.5 Area of green = (35.5^2) 1260.25 Area of path 1482.25 – 1260.25 = 222 square metres <u>Alternative method 1</u> M1 38.5 × 1.5 M1 35.5 × 1.5 A1 for either 57.75 or 53.25 B1 for both 115.5 and 106.5. M1 115.5 + 106.5 A1 222 square metres <u>Alternative method 2</u> M1 38.5 × 1.5 (= 57.75) A1 (57.75 × 4 =) 231 M1 1.5 × 1.5 (= 2.25) A1 (2.25 × 4 =) 9 M1 231 – 9 A1 222 square metres	M1 A1 B1 B1 M1 A1 6	 FT their 1482.25 – their 1260.25 FT their 2 × 57.75 and 2 × 53.25 FT provided M1, A1 and B1 awarded FT provided both M marks awarded and one A mark

4.

(a) 46 cm
(b) 60 cm²

5.

2015 November UNIT 3 (calculator allowed) Foundation Tier	Mark	FINAL MARK SCHEME Comments
11. Length of side of the square = width of rectangle=6(cm) Length of each rectangle = 9(cm) $8\times 9 + 4\times 6$ Or equivalent. $= 96$ cm	B1 B1 M1 A1 U1 5	 FT 'their' length and width of rectangle. If B0 B0 M0 A0 awarded, SC1 for area of rectangle = 54(cm^2).

6.

19. (Area of semi-circle =) $\pi\times 6{\cdot}3^2/2$ $= 62{\cdot}3$ to $62{\cdot}4$ (m^2) (Number of tins of paint needed =) $(\pi\times 6{\cdot}3^2/2) \div 15$ $= 5$(tins)	M1 A1 M1 A1 4	 FT 'their area' provided π used in the calculation. Provided of equivalent difficulty.

7.

15. (area of square =) 144 (area of circle =) $\pi \times 6^2$ 113 to 113.1428..... (area of shaded part =) 30.857..... to 31 cm^2	B1 M1 A1 A1 4	 FT 'their area of square' – 'their area of circle' provided M1 awarded

8.

November 2015 UNIT 1 Higher	Mark	FINAL MARK SCHEME Comments
7. (Area semicircle =) $\frac{\pi \times 5^2}{2}$	M1	
$= 39{\cdot}27$(m^2) OR $25\pi/2$ or equivalent.	A1	Accept 39·2 to 39·3 inclusive. SC1 for any of the following 78·5 to 78·6 inclusive OR 25π OR 157(·…) OR 50π.
(Area of trapezium=) $\frac{(10+16)}{2} \times 4$	M1	Allow M1 for intent e.g. $10 + 16 \div 2 \times 4$
$= 52$(m^2)	A1	C.A.O.
(% of paint required =) $\frac{39{\cdot}27 + 52}{125}$ ($\times 100$)	M1	F.T. 'their areas'
$= 73$(·01..%)	A1 6	

9.

June 2015 UNIT 1 Higher	✓	Mark	Comments
4. Sight of (area of ABCF =) 2000(m^2)	✓	B1	
(Area of FCDE =) $\frac{(50 + 10)}{2} \times 20$	✓	M1	Allow M1 for correct intent, e.g missing brackets '50 +10 × 0·5 × 20'.
= 600(m^2)	✓	A1	C.A.O.
(Total area =) 2600(m^2)	✓	A1	F.T. 'sum of their two values'.

10.

13. 5×4 (+) $\frac{10 \times 5}{2}$ (+) $\frac{\pi \times 2^2}{2}$	M2	M1 for one or two correct.
= 20 (+) 25 (+) 6·28(...)	A2	A1 for 20 AND 25, A1 for 6·28(...) or 6·3
= 51·3(m^2)	A1	F.T. provided M1A1 gained and three values added with an answer given to 1 d.p.
	5	

11.

Linear GCSE Mathematics Higher Tier November 2015 Paper 1		FINAL MARK SCHEME Comments
5. **Use of** area = ½ base × height, e.g. 12 = ½ ×x×6	M1	Accept written informally but must include relevant values
(x =) 4 (metres)	A1	
Area trapezium is ½×x×(6 + 14)	M1	**Must** show substitution for x. FT substitution of 'their derived x', or unsupported 4 (m) Do not FT from spurious a measurement for x, only FT if working is seen to derive x
40 (m^2)	A1	*Alternative for area of the trapezium, with diagonal splitting into 2 triangles, with the same height, areas of these triangles are 12m^2 and 12×14/6= 28m^2*
	4	

12.

$XZ^2 = 8^2 + 6^2$ (= 100)	M1	Correct substituted Pythagoras
(XZ = 10)		
Radius of the circle = 5cm	A1	C.A.O.
Area of triangle XYZ = ½×6×8	M1	
= 24 (cm^2)	A1	
Area of circle = $\pi \times 5^2$	M1	F.T. their radius if first M1 awarded.
= 78.5(398...)	A1	F.T. provided at least one of the M marks for area previously awarded.
Area shaded = 54.5 (cm^2)	B1	**Allow B1 for an answer of 54 or 55**.
	7	