



2.

Gyrrodd Kevin o Newcastle i Swindon, pellter o 273 o filltiroedd.  
Dechreuodd ei daith am 9:15 a.m. a chyrrhaeddodd Swindon am 4:15 p.m.

(a) Cyfrifwch ei gyflymder cyfartalog am y daith.

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[3]

Ar gyfartaledd, mae ei gar yn defnyddio un galwyn o ddiesel am bob 40 milltir sy'n cael eu teithio.

Mae galwyn o ddiesel yn costio tua £6.30.

(b) Darganfyddwch amcangyfrif, i'r £ agosaf, o faint oedd y gost iddo am y diesel a gafodd ei ddefnyddio ar y daith.

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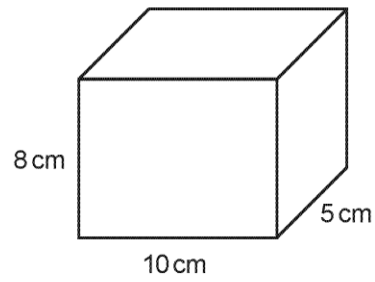
[2]







6.



*Nid yw'r diagram wedi'i luniadu wrth raddfa*

Dimensiynau ciwboid wedi'i wneud o fetel yw 10 cm, 8 cm a 5 cm. Màs y ciwboid yw 1.1 kg. Cyfrifwch ddwysedd y metel. Nodwch unedau eich ateb. [4]

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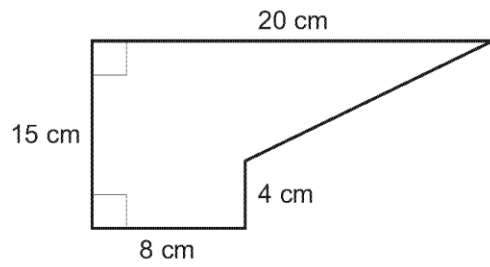
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7.

Mae'r diagram isod yn dangos trawstoriad unffurf drwy drawst metel.



*Nid yw'r diagram wedi'i luniadu wrth raddfa*

- (a) Cewch eich asesu ar ansawdd eich cyfathrebu ysgrifenedig yn y rhan hon o'r cwestiwn.

Cyfrifwch arwynebedd y trawstoriad.  
Rhaid i chi ddangos eich gwaith cyfrifo.

[6]

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- (b) Hyd y trawst metel yw 2 m a màs y trawst metel yw 108 kg.  
Cyfrifwch ddwysedd y metel, gan roi eich ateb mewn  $\text{g/cm}^3$ .

[4]

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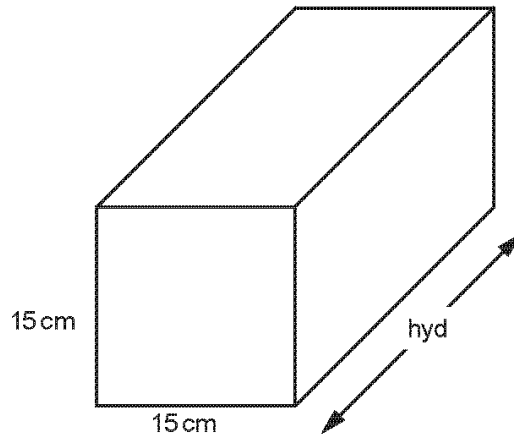
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8.



*Nid yw'r diagram wedi'i luniadu wrth raddfa*

Mae'r bloc solet sydd i'w weld uchod wedi'i wneud o fetel sydd â'r dwysedd  $2.7 \text{ g/cm}^3$ .  
Cyfaint y bloc solet yw  $40\,500 \text{ cm}^3$ .

Mae twll yn cael ei ddrilio trwy hyd cyfan y bloc.  
Arwynebedd trawstoriadol y twll yw  $25 \text{ cm}^2$ .  
Cyfrifwch beth yw màs y bloc sydd ar ôl.

[6]

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9.

Dyma rywfaint o wybodaeth o gylchgrawn daearyddol yn 2014:

- Poblogaeth y DU (UK):  $6.5 \times 10^7$ , yn gywir i'r 1000000 agosaf
- Arwynebedd y DU:  $244\,000\text{km}^2$ , yn gywir i'r  $1000\text{km}^2$  agosaf

Gan ddefnyddio'r ffigurau hyn, cyfrifwch y gwerth mwyaf posibl ar gyfer dwysedd poblogaeth y DU, yn nhermau poblogaeth y  $\text{km}^2$ . [4]

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10.

(a) Mae'r cwmni *Aqua24/7* yn llenwi poteli dŵr plastig.



Mae'r cwmni'n llenwi 3000 o boteli dŵr un-litr yr awr.  
Mae'r broses yn ddi-dor (*continuous*) am 12 awr bob dydd.

(i) Cyfrifwch gyfradd llenwi poteli dŵr y munud.  
Nodwch uned eich ateb.

[2]

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(ii) Cyfrifwch nifer y poteli dŵr sy'n cael eu llenwi yn ystod un diwrnod gwaith.  
Rhaid i chi roi eich ateb yn y ffurf safonol.

[2]

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## Cynllun Marcio

1.

6. (Distance $\Rightarrow$ ) $2\frac{1}{2} \times 30$ <div style="text-align: right;"><math>= 75</math> (miles)</div>	✓		M1	Allow M1 for $2.3(0) \times 30$ . C.A.O.
	✓		A1	
( Average speed $\Rightarrow$ ) $75 \div 3$ <div style="text-align: right;"><math>= 25</math> (mph)</div>	✓		M1	F.T. 'their 75'.
	✓		A1	

2.

9. (a) (Time taken $\Rightarrow$ ) 7(hours) OR 420(min) Use of 'Distance' $\div$ 'Time' $= 39$ (mph) OR $62.4$ (kph) OR equivalent.		B1	F.T. 'their time'. Any other unit of speed must be stated.
		M1	
(b) $\frac{273}{40} \times (\pounds)6.3(0)$ <div style="text-align: right;"><math>(\pounds)43</math></div>		M1	<i>Also allow <math>280/40 \times 6.3</math> OR <math>273/40</math> taken as 7gallons for M1 leading to <math>(\pounds)44</math> for A1.</i> <i><math>(\pounds)42.99(\dots)</math> is A0.</i> SC1 for evidence of $273/40 (=6.825)$ taken as $6 \times \pounds6.30 = \pounds38$ to nearest '£'
		A1	
		5	

3.

$2 \times 60 = 120$ milltir	B1	Pellter ar gyfer y ddwy awr gyntaf
$165 - 120 = 45$ milltir	B1	Pellter gweddill y daith
$45 \div 30 =$	M1	
1.5 awr	A1	Amser rhan olaf y daith
$2 + 1.5 = 3.5$ awr	A1	Cymerodd y daith 3.5 awr (neu 3 awr 30 munud)
	ACY2	

4.

<p>5(a) All three stages of the appropriate calculation  <math>560 \times (4.55 \div 37.8) \times 1.48</math></p> <p>(£)99.76</p> <p>Look for</p> <ul style="list-style-type: none"> <li>• spelling</li> <li>• clarity</li> <li>• the use of notation (watch for the use of '=' , £, being appropriate)</li> </ul> <p>QWC2: Candidates will be expected to</p> <ul style="list-style-type: none"> <li>• present work clearly, with words explaining process or steps</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>• make few if any mistakes in mathematical form, spelling, punctuation and grammar and include units in their final answer</li> </ul> <p>QWC1: Candidates will be expected to</p> <ul style="list-style-type: none"> <li>• present work clearly, with words explaining process or steps</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• make few if any mistakes in mathematical form, spelling, punctuation and grammar and include units in their final answer</li> </ul> <p>(b)(i) <math>560 / 10.75</math> or <math>560 / 10 \frac{3}{4}</math>  <math>52(.093 \text{ mph})</math></p>	<p>M3</p> <p>A2</p> <p>QWC 2</p> <p>M2 A1 CAO</p>	<p>M2 for sight of <math>560 \times 4.55 \div 37.8</math>, OR  M1 for sight of <math>560 \div 37.8, 4.55 \div 37.8,</math>  <math>37.8 \div 4.55,</math> or <math>4.55 \times 1.48</math></p> <p><i>Note:</i>  <math>560 \div 37.8</math> (= 14.814814... gallons)  <math>\times 4.55</math> (= 67.407... litres)  <i>Use of 14.8 gives 67.34, use of 15 gives 68.25</i></p> <p>Depend s on M3  A1 for (£)99.7629.. or 99.6632 or 101.01 or other amount from premature approximation</p> <p>QWC2 Presents relevant material in a coherent and logical manner, using acceptable mathematical form, and with few if any errors in spelling, punctuation and grammar.</p> <p>QWC1 Presents relevant material in a coherent and logical manner but with some errors in use of mathematical form, spelling, punctuation or grammar  OR  evident weaknesses in organisation of material but using acceptable mathematical form, with few if any errors in spelling, punctuation and grammar.</p> <p>QWC0 Evident weaknesses in organisation of material, and errors in use of mathematical form, spelling, punctuation or grammar.</p> <p>M1 for <math>560/10.45</math> or <math>560/675</math> or <math>560/645</math>  CAO</p>
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5.

November 2015 UNIT 1 Higher	Mark	FINAL MARK SCHEME Comments
<p>12. (Total distance travelled =) 130(miles)  (Fuel used =) <math>\frac{30}{48} + \frac{40}{50} + \frac{60}{40}</math>  = 2.925 (gal) or equivalent.</p> <p>(Fuel consumption =) <math>\frac{130}{2.925}</math>  = 44.4(4...)(mpg)</p>	<p>B1 M1 A1 M1 A1 5</p>	<p>Allow 3(gal) from correct work.</p> <p>F.T. their derived values.</p>

6.

<p>10. (Volume of block =) <math>10 \times 8 \times 5 (=400) (\text{cm}^3)</math>  (Density of metal =) <math>1100 \div 400</math> OR <math>1.1 \div 400</math> OR <math>1.1 \div 0.0004</math></p> <p>= 2.75 OR 0.00275 OR 2750  Appropriate unit <math>\text{g/cm}^3</math> <math>\text{kg/cm}^3</math> <math>\text{kg/m}^3</math></p>	<p>✓ ✓ ✓ ✓</p>	<p>B1 M1 A1 U1</p> <p>FT 1100 or <math>1.1 \div</math> 'their volume' provided it is a product. Volume may be given in another metric unit.</p>
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7.

<p><b>Ribbon marked</b>                  (a) <b>To be viewed with diagram.</b>                  (Area of rectangle =) <math>8 \times 15 = 120</math> OR <math>8 \times 4 = 32</math> (cm<sup>2</sup>)                   (Area of triangle =) <math>(12 \times 11) \div 2</math> OR                  (Area of trapezium =) <math>0.5(8+20) \times 11</math>                  = 66 (cm<sup>2</sup>) OR 154 (cm<sup>2</sup>)                  (Total area =) 186 (cm<sup>2</sup>)</p> <p>QWC:                  Look for</p> <ul style="list-style-type: none"> <li>• correct units used i.e. cm<sup>2</sup></li> <li>• spelling in at least 1 statement/sentence</li> <li>• clarity of text explanations</li> </ul> <p>QWC2: Candidates will be expected to</p> <ul style="list-style-type: none"> <li>• present work clearly, with words or quantities shown for clarity of process or steps</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>• make few if any mistakes in mathematical form, spelling, punctuation and grammar in their answer</li> </ul> <p>QWC1: Candidates will be expected to</p> <ul style="list-style-type: none"> <li>• present work clearly, with words or quantities shown for clarity of process or steps</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• make few if any mistakes in mathematical form, spelling, punctuation and grammar in their answer</li> </ul>	<p>✓ ✓ ✓ ✓</p> <p>✓ ✓</p>	<p>B1 M1 A1 B1</p> <p>QWC 2</p>	<p>If 2 rectangles are formed their total area needs to add to 120.</p> <p>FT provided first B1 awarded, and a correct formula used for the area of a triangle or trapezium.</p> <p>QWC2 Presents material in a coherent and logical manner, using acceptable mathematical form, and with few if any errors in spelling, punctuation and grammar.</p> <p>QWC1 Presents material in a coherent and logical manner but with some errors in use of mathematical form, spelling, punctuation or grammar.</p> <p>OR                  evident weaknesses in organisation of material but using acceptable mathematical form, with few if any errors in spelling, punctuation and grammar.</p> <p>QWC0 Evident weaknesses in organisation of material, and errors in use of mathematical form, spelling, punctuation or grammar.</p>
<p>(b) <math>186 \times 200</math>                  = 37 200 (cm<sup>3</sup>)  <math>108\ 000 \div 37\ 200</math>                  = 2.9(032...) (g/cm<sup>3</sup>)</p>	<p>✓ ✓ ✓ ✓</p>	<p>M1 A1 M1 A1</p>	<p>FT 'their 186' × 200.</p> <p>FT 108 000 ÷ 'their derived 37 200'.</p> <p>If no marks awarded, SC1 for 'their mass' ÷ 'their volume'.</p>

8.

<b>Unitised Unit 3 – June 2015                      Higher Tier</b>	✓		<b>Comments</b>
<p>13. (length of block =) <math>40\ 500 / (15 \times 15)</math>                  = 180 (cm)                  (Volume of hole =) <math>25 \times 180</math>                  = 4500 (cm<sup>3</sup>)                  (Mass of block remaining =) <math>2.7 \times (40\ 500 - 4500)</math>                  = 97 200 (g) or equivalent</p>	<p>✓ ✓ ✓ ✓ ✓ ✓</p>	<p>M1 A1 M1 A1 M1 A1</p>	<p>FT 'their 180'.</p> <p>FT 'their 4500' provided it is a volume.                  Mark final answer. Accept rounded answers provided previous M1 awarded  <i>Alternative method:</i>                  B1 for (Mass of whole block =) <math>40\ 500 \times 2.7</math> (109 350 (g))                  M1 for (length of block =) <math>40\ 500 / (15 \times 15)</math>                  A1 for 180 (cm)                  M1 for (Mass of hole =) <math>25 \times 180 \times 2.7</math> FT 'their 180'                  A1 for 12 150 (g)                  A1 for 97 200 (g) FT 'their 109 350'.</p>

9.

Gweld 65 500 000 neu gywerth	B1	Caniatáu defnyddio 65 499 999 neu gywerth drwy'r cyfan
Gweld 243 500 $65\ 500\ 000 \div 243\ 500$ = 268(.993...) neu 269 poblogaeth/km <sup>2</sup>	B1 M1 A1	Derbyn 270 o waith cyfrifo cywir

10.

13(a)(i) $3000 \div 60$ = 50 l/min. or 50 litres per minute	M1 A1	Units must be given for A1 Accept 50 bottles/min
(ii) $3000 \times 12$ or $36000$ $3.6 \times 10^4$	M1 A1	If no marks SC1 for $7.2 \times 10^4$