







4.

- (a) Mae pris tanwydd (*fuel*) wedi cynyddu 20% bob blwyddyn.  
Cost tanwydd oedd £1.49 y litr ar 1 Ionawr 2015.  
Os bydd pris tanwydd yn parhau i gynyddu ar yr un gyfradd, beth fydd cost litr o danwydd ar 1 Ionawr 2020 yn eich barn chi?  
Rhowch eich ateb yn gywir i'r geiniog agosaf. [4]

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- (b) Ar ôl cynnydd o 24%, cost 1 dunnell fetrig o lo (*coal*) yw £451.36.  
Cyfrifwch gost 1 dunnell fetrig o lo cyn y cynnydd yn y pris. [3]

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5.

Cwblhewch y tabl isod.

Swm gwreiddiol	Ar ôl gostyngiad o	
	40%	2%
£ .....	£492	£ .....

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[4]

6.

Buddsoddodd Carys rywfaint o arian mewn cyfrif banc newydd oedd yn talu llog o 4% y flwyddyn. Ni chafodd unrhyw arian arall ei roi i mewn i'r cyfrif na'i dynnu allan o'r cyfrif. Ar ddiwedd un flwyddyn roedd ganddi £884 yn y cyfrif hwn.

Faint o arian gwnaeth Carys ei fuddsoddi yn wreiddiol?

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[3]

7.

Mae siopwr (*shopkeeper*) yn cyfrifo pris gwerthu cot drwy godi pris y gwneuthurwr (*manufacturer*) 18%.

Mewn sêl, mae'r siopwr yn gostwng y pris gwerthu 15%. Pris y got yn y sêl oedd £90.27.

Cyfrifwch bris y gwneuthurwr am y got.

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[5]

8.

Gwerthodd Bethan ei thŷ am £137 750.

Collodd hi 5% o'r pris roedd hi wedi ei dalu am y tŷ.

Faint oedd hi wedi ei dalu am y tŷ?

[3]

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9.

- (a) Mae Freddy yn mynd i brynu tocyn i gyngerdd.  
Mae arwydd ger y swyddfa docynnau yn dweud “20% i ffwrdd o bob pris tocyn gwreiddiol”.  
Mae Freddy'n dod i ffwrdd ar ôl talu pris gostyngol o £36.80 am ei docyn.  
Beth oedd pris gwreiddiol tocyn Freddy?

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[3]

10.

- (a) Mae mesuriad wedi cael ei gynyddu 26%.  
Ar ôl y cynnydd y mesuriad yw 57.96 cm.  
Cyfrifwch y mesuriad gwreiddiol.

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[3]

- (b) Cyfrifwch swm  $2.31 \times 10^{14}$ ,  $3.48 \times 10^{12}$  a  $6.8 \times 10^{13}$ .  
Rhowch eich ateb yn y ffurf safonol yn gywir i 3 ffigur ystyrlon.

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[2]

# Cynllun Marcio

1.

$5.26.5 - 26.5 \times 0.12$ OR $26.5 \times 0.88$ (=23.3(2))	M1	OR M2 for
$23.3(2) - 23.3(2) \times 0.08$ OR $23.3(2) \times 0.92$ (= 21.4544 or 21.436)	M1	$26.5 \times 0.88 \times 0.92$ FT 'their 23.32', but not 26.5
$25.3 - 21.4544$ (= 3.8456) OR $25.3 - 21.436$ (=3.864)	m1	Depends on both previous M marks FT for their 23(.32) and their 21(...)
3.8(...°C) to 3.9(°C) from correct working	A1 4	Accept 4(°C) from correct working

2.

<p><b>14 (million) × 1.017<sup>3</sup></b> (=14.726 206 782 million)</p> <p><b>×1.02<sup>2</sup></b></p> <p>15 321 145(.54... tons) or 15.3(2... million tons)</p>	M2	<p><i>Penalise -1 incorrect place value for 14 million once only</i> Or equivalent to attempt 1.7% on 3 different values M1 for <math>14 \text{ (million)} \times 1.017</math> or <math>14 \text{ (million)} \times 1.7/100 + 14 \text{ (million)}</math> or equivalent M1 only if additional years are included</p>																	
	M2	<p>Or equivalent to attempt 2% on 2 different values FT from 'their 14.7... million' provided &gt; 14 (million), i.e. an increased amount from the original M1 for '... × 1.02' or '...×2/100 + ...' or equivalent M1 only if additional years are included</p>																	
	A1	<p>CAO <u>from correct working</u>, although accept answers rounding to 15 300 000 Ignore any incorrect units given <i>An unsupported correct answer is awarded all 5 marks</i></p> <p><i>Simple 'compound' working may be awarded both M1 marks (simple 'compound' answer is 15 302 560 tons), maximum mark possible is M1, M1, A0. Allow embedded working, e.g. '14(million) × 1.051' or equivalent for M1 and '... × 1.04' or equivalent for M1.</i></p> <p><i>Use of 1.17 and 1.2 is not a misread, however award SC1 for an answer of 32 288 518(.08 tons) or 32 000 000</i></p> <p>Note:</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Millions of tons</th> <th>Tons</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>14.238</td> <td>14 238 000</td> </tr> <tr> <td>2014</td> <td>14.480046</td> <td>14 480 046</td> </tr> <tr> <td>2015</td> <td>14.7262068</td> <td>14 726 206.8</td> </tr> <tr> <td>2016</td> <td>15.0207309</td> <td>15 020 730.9</td> </tr> <tr> <td>2017</td> <td>15.3211455</td> <td>15 321 145.5</td> </tr> </tbody> </table>	Year	Millions of tons	Tons	2013	14.238	14 238 000	2014	14.480046	14 480 046	2015	14.7262068	14 726 206.8	2016	15.0207309	15 020 730.9	2017	15.3211455
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3.

$34 \times 0.98^2 \times 1.06^5$	M2	<p>NEU ddull cywerth i ostwng 2% ac i gynyddu 6% ar symiau gwahanol (<math>34 \times 0.98^2 = 32.6536</math>) (<math>34 \times 1.06^5 = 45.4996...</math>) M1 am weld naill ai <math>\times 0.98^2</math> neu <math>\times 1.06^5</math> neu gyfrifiadau cywerth</p>
Ateb yn yr ystod (£)43.67 i (£)43.7(0)	A1	CAO, o waith cyfrifo cywir

4.

Methods in Mathematics June 2015 Unit 2 Higher Tier	Mark	Comment
8.(a) $1.49 \times 1.2(0)^3$ (£)3.71	M2 A2	M1 for sight of $1.49 \times 1.2(0)$ A1 for (£)3.70(...) or for (£)3.72 For 6 years considered, allow M1, and SC1 for an answer (£)4.45
(b) Sight of or implication that 451.36 is 124% $451.36 \div 1.24$ or equivalent (£)364	B1 M1 A1 7	

5.

12.	B4	B3 for 820, or B2 for $492 \times 100 / 60$ , or B1 for '60% is 492', or B1 for $0.98 \times$ 'their 820' correctly evaluated to nearest penny or unrounded									
<table border="1"> <thead> <tr> <th>Amount</th> <th colspan="2">After a decrease of</th> </tr> <tr> <td></td> <th>40%</th> <th>2%</th> </tr> </thead> <tbody> <tr> <td>£820</td> <td>£492</td> <td>£803.6(0)</td> </tr> </tbody> </table>	Amount	After a decrease of			40%	2%	£820	£492	£803.6(0)	4	
Amount	After a decrease of										
	40%	2%									
£820	£492	£803.6(0)									

6.

11 $104\% \equiv (\text{£})884$ (Original investment) $\frac{884 \times 100}{104}$ $= (\text{£})850$	B1 M1 A1	Accept any indication.
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7.

13. Idea to work with £90.27 as 85% or considering the 2 <sup>nd</sup> step as 118% of original price $90.27 \div 0.85$ or equivalent $106.2(0)$ $106.2(0) \div 1.18$ (£)90	S1 M1 A1 M1 A1 5	Maybe implied in further working FT their 106.2(0) provided $>90.27$
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8.

$95\% \equiv (\text{£})137\,750$ $(\text{£})137\,750 \times \frac{100}{95}$ or equivalent. $= (\text{£})145\,000$	B1 M1 A1	Accept any indication.
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9.

5.(a) Idea that 36.80 is 80% $(36.80/80) \times 100$ (£)46	B1 M1 A1	Or equivalent full method, e.g. sight of attempt $\div 8$ and $\times 10$
5.(b) $60y/x$	B2	Accept $y/(x/60)$ ISW. B1 for $x/60$ or $y/x$ including embedded within an incorrect expression

10.

9.(a) Considering 57.96 as 126% $57.96/1.26$ 46 (cm)	B1 M1 A1 B2	Or equivalent with 1.26
(b) $3.02 \times 10^{14}$	5	B1 for $3.0248 \times 10^{14}$ or $3.025 \times 10^{14}$ or 302 480 000 000 000 or 302 000 000 000 000 or 302 500 000 000 000