Anhafaleddau

1.

Datryswch yr anhafaledd $3x - 4 < 26$.

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[2]

2.

(b) Datryswch yr anhafaledd $9x + 5 < 77$. [2]

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3.

(b) Datryswch yr anhafaledd $10x + 5 > 45$.

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[2]

4.

(ch) Datryswch yr anhafaledd $2x + 3 > 35$. [2]

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5.

(ch) Datryswch $10x + 8 < 42$. [2]

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6.

(c) Datryswch yr anhafaledd canlynol. [2]

$$4x + 7 > 9$$

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7.

Datryswch yr anhafaledd $3 - x < 7$. [2]

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8.

(c) Datryswch $3 - 2n > 4n - 9$.

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[2]

9.

(d) Ysgrifennwch y rhif cyfan mwyaf sy'n bodloni'r anhafaledd $5x < 85$. [2]

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10.

(ch) (i) Datryswch yr anhafaledd $2x + 3 > 35$. [2]

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(ii) Trwy hynny, ysgrifennwch y rhif cyfan lleiaf sy'n bodloni'r anhafaledd $2x + 3 > 35$. [1]

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11.

(d) Ysgrifennwch y rhif cyfan lleiaf sy'n bodloni'r anhafaledd $6x > 62$. [2]

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Y rhif cyfan lleiaf yw .....

(dd) Datryswch yr anhafaledd $4x + 2 < 58$. [2]

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12.

(ch) Datryswch yr anhafaledd $6x + 4 < 100$. [2]

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(d) Ysgrifennwch y rhif cyfan mwyaf sy'n bodloni'r anhafaledd $3x < 81$. [2]

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13.

(c) Darganfyddwch bob cyfanrif n sy'n bodloni'r anhafaledd $6 < 2n < 13$. [3]

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14.

Os yw n yn gyfanrif ac mae $-5 < 2n \leqslant 2$, rhestrwch werthoedd posibl n. [3]

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15.

(c) Darganfyddwch holl werthoedd cyfanrifol n sy'n bodloni'r anhafaledd. [3]

$$5 \leqslant 3n < 18$$

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16.

Aeth Anwar i siopa i brynu llyfr a rhai *CDs*.

Roedd ganddo £60 yn union.
Mewn un siop, prynodd lyfr yn costio £15 a rhai *CDs*.
Roedd pob *CD* yn costio £7.
Pan dalodd am yr eitemau hyn, cafodd newid.

Prynodd Anwar n o *CDs*.
Ysgrifennwch anhafaledd sy'n cael ei fodloni gan n.

Beth yw'r nifer mwyaf posibl o *CDs* gallai Anwar fod wedi ei brynu? [4]

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17.

Mae gan William n o farblis.
Roedd gan Lois 4 gwaith cymaint o farblis â William, ond erbyn hyn mae hi wedi colli 23 ohonyn nhw.

Mae gan Lois fwy o farblis na William o hyd.

Ysgrifennwch anhafaledd yn nhermau n i ddangos y wybodaeth uchod.
Defnyddiwch eich anhafaledd i ddarganfod y nifer lleiaf o farblis a allai fod gan William. [4]

Cynllun Marcio

1.

14. $3x < 30$ $x < 10$	M1 A1 2	No marks for '=' unless final replaced to give $x<10$ then award M1, A1. An answer of $x<30/3$ gets M1, AO

2.

(b) $9x < 77 - 5$ $x<8$	A1	to give $x<8$ then award M1 A1. SC1 for $x<82/9$ ISW

3.

(b) $10x > 40$ $x > 4$	M1 A1 5	No marks for use of "=", unless finally replaced to give $x>4$ then award M1 A1. SC1 for $x>5$ from $10x>50$ OR sight of $9\times6=54$ AND $9\times7=63$

4.

d) $2x > 32$ $x > 16$	M1 A1 6	No marks for use of "=", unless finally replaced to give $x>16$ then award M1 A1. SC1 for $x > 19$

5.

(d) $10x < 34$ or $10x < 42 - 8$ $x < 34/10$ or $x < 3.4$ or $x < 3^4/_{10}$ or $x < 3^2/_5$ or equivalent **H8e**	B1 B1	Do not accept '=' FT from 1 error only. ISW *If '=' used but replaced by '<' to give final correct answer, allow B2* *Note: $10x < 42 + 8$ must lead to $x < 5$ to be awarded B0,B1*

6.

(c) $4x > 2$ $x > ½$ (or $x > 2/4$)	B1 B1 6	FT from $4x > a$. Mark final answer. B0 for use of = sign, unless replaced in final answer.

7.

6. $-x < 7 - 3$ OR $3 - 7 < x$ or equivalent $x > -4$ OR $-4 < x$		M1 A1	Accept $-3 + x > -7$ as a valid first step Mark final answer. Solving an equation gets M0A0 unless the 'equals' sign is correctly replaced by an inequality sign.

8.

10.(c) $-6n > -12$ OR $12 > 6n$ $n < 2$ or $2 > n$	M1 A1	CAO. Mark final answer *SC1 for any answer $n<-1$ from working $-6>6n$, or* *For an answer of $n<1$ from working $-6n>-6$* *Candidates working with '=' gain no marks, however if replaced to give final answer of $n<2$ or $2>n$ then award M1, A1*

9.

(e) $x < 85/5$ or $x < 17$ 16	M1 A1 10	Or sight of $5\times16 = 80$ with $5\times17 = 85$ Accept unsupported 16, or a unique answer of 16 from a trial and improvement method. Do not accept $x<16$. *SC1 for sight of $5x = 85$, $x = 17$ followed by selecting $x = 16$*

10.

(d)(i) $2x > 32$ $x > 16$ (ii) 17	M1 A1 B1 9	No marks for use of "=", unless finally replaced to give $x>16$ then award M1 A1. Mark final answer. SC1 for $x > 19$ FT their $x > n$ indicating the next whole number *Allow embedded answer, $2\times17 + 3 > 35$*

11.

(e) $x > 62/6$ or $x > 10.3(3..)$ or $x > 10⅓$ 11	M1 A1	Or sight of $6\times10=60$ with $6\times11=66$ Allow sight of $x \geq 11$ for M1 Accept unsupported 11, or a unique answer of 11 from a trial and improvement method. Do not accept $x>11$
(f) $4x < 58 - 2$ or $4x < 56$ or $x < 56/4$ $x<14$	M1 A1	No marks for use of "=" throughout, unless finally replaced to give $x<14$ then award M1 A1. Accept trial and improvement with sight of $4\times13 + 2 = 54$ and $4\times14 + 2 = 58$ *If no marks, SC1 for $x<15$*

12.

(d) $6x < 100 - 4$ or $6x < 96$ or $3x<50-2$ or $3x<48$ $x< 16$	M1 A1	No marks for use of "=", unless finally replaced to give $x<16$ then award M1 A1. SC1 for $x<104/6$ ISW
(e) $x < 81/3$ or $x< 27$ or $78 < 81$ $(x =)$ 26	M1 A1 8	Or sight of $3\times26 = 78$ with $3\times27 = 81$ or equivalent divisions Accept unsupported 26, or a unique answer of 26 from a trial and improvement method, or $3 \times 26 < 81$ Do not accept $x<26$. *Allow sight of $3x = 81$, $x = 27$ followed by selecting $x = 26$*

13.

(c) $3 < n < 6½$ OR $3 < n < 13/2$ OR $n > 3$ with $n < 6½$	M1	
$n = 4,5,6$ **H7bc**	A2 6	A1 for all 3 with at most 1 error OR any 2 correct and no errors **If no marks, award** SC2 for sight of any 2 correct answers with no incorrect answer **If no marks, award** SC1 for sight of any 1 correct answer with no incorrect answer **Accept embedded answers**

14.

–2, –1, 0, 1	B3 3	B2 for a list with one omission or one extra number. B1 for 2 correct integers (and no incorrect integers). If an incorrect inequality is given, FT for B2 provided –2·5 or 1 seen and equivalent difficulty. If no integers are listed, B1 for $-2{\cdot}5 < n \leq 1$ or for $-2{\cdot}5 < n$ and $n \leq 1$ (or equivalent). Award B0 for a list arising from $-5 < n \leq 2$ (i.e. disregarding the factor of 2).

15.

14. (c) 2, 3, 4, 5	B3	B1 for the 2, B1 for the 5 AND NO 6 or above, B1 for the 3 and 4 AND NO incorrect numbers, but allow 6 here. **SC1 for $5/3 \leq n < 6$ (not 18/3)**

16.

Unit 2 GCSE Maths November 2015 HigherTier	**MARK**	**FINAL MARK SCHEME Comment**
5. $7n + 15 < 60$ or equivalent $7n < 45$ $n < 45/7$ or $n < 6\ 3/7$ or $n < 7$ (Greatest number of CDs =) 6	B1 B1 B1 B1 4	B1 for any correct inequality. FT 'their inequality' if of the form $an + b < 60$. This mark implies the 1st B1. An unsupported correct inequality of this form gains B1 B1 B1. Accept $n \leq 6$. A correct inequality followed by '6' gets all 4 marks e.g. $7n + 15 < 60$ then '6' OR $n < 7$ then '6'. *B3 for an alternative solution with no use of inequalities:e.g.* $7n + 15 = 60$ *B1* *(n =)[60 – 15]/7* *B1* *6(CDs)* *B1* *B3 for an alternative solution using trial and improvement:e.g.* *2 correct, appropriate trials from amongst n = 4,5,6,7 or 8* *B1* *completion of trial and improvement method e.g. consideration of n = 6 and n = 7* *B1* *6(CDs)* *B1* Award SC2 for sight of unsupported 6.

17.

$4n - 23 > n$ NEU $n < 4n - 23$	✓✓	B2	B1 am $4n \pm \ldots > n$ NEU B1 am $4n - 23 > an + b$ $a \neq 0$ NEU B1 am $4n - 23 \geq n$ B0 am $4n - 23 < n$.
(nifer lleiaf o farblis =) 8	✓✓	B2	Dilyn trwodd o 'eu hanhafaledd', os yw o anhawster cywerth. (e.e. $4n - 23 > n + 23$ gan roi ateb o 16) B1 am weld $n > \frac{23}{3}$ neu gywerth. (Gydag ateb dilyn trwodd tebyg e.e. $n > 46/3$ o'r enghraifft uchod o $4n - 23 > n + 23$) NEU ganiatáu B1 am $n > 7$ NEU $n \geq 8$ (Gydag ateb dilyn trwodd tebyg e.e. $n > 15$ o'r enghraifft uchod o $4n - 23 > n + 23$)