



2.

(a) Ad-drefnwch y fformiwla ganlynol i wneud  $k$  yn destun. [2]

$$3k^2 = m$$

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(b) Ad-drefnwch y fformiwla ganlynol i wneud  $g$  yn destun. [2]

$$eg + fg = h$$

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3.

Gwnewch  $x$  yn destun y fformiwla ganlynol. [4]

$$a(x - b) = x(c - d)$$

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8.

(c) Ad-drefnwch y fformiwla ganlynol i wneud  $r$  yn destun.

$$7r - b = ar - c$$

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[3]

9.

Mae'r fformiwla  $P = \frac{2 \cdot 65N - C}{D}$

yn cael ei defnyddio i gyfrifo'r elw (P) mae cwmni'n ei wneud, mewn punnoedd, wrth werthu eitem benodol mae'n ei gwneud.

N yw nifer yr eitemau wedi'u gwerthu.

C yw cost gwneud sefydlog, mewn punnoedd.

D yw cyfradd addasu treth.

Pan werthodd y cwmni 8000 o'r eitemau, gwnaeth elw o £14 160.

Y gyfradd addasu treth oedd 1.25.

Cyfrifwch y gost gwneud sefydlog.

[3]

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10.

Mae'r canlynol yn fformiwla sy'n cael ei defnyddio gan beirianwyr i fesur pa mor bell mae gwrthrych yn teithio mewn llinell syth dan amodau penodol.

$$s = ut + \frac{1}{2}at^2$$

- $s$  yw'r pellter sydd wedi'i deithio
- $u$  yw cyflymder cychwynnol y gwrthrych
- $a$  yw cyflymiad y gwrthrych
- $t$  yw'r amser a gymerodd

Cyflymder cychwynnol gwrthrych yw 20 metr yr eiliad.  
Mae'n teithio pellter o 100 metr mewn 4 eiliad.  
Darganfyddwch gyflymiad y gwrthrych.

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[3]

# Cynllun Marcio

1.

Linear GCSE Mathematics Higher Tier November 2015 Paper 1		FINAL MARK SCHEME Comments
13(a) $7h = 11q + 3p - 5p$ or $7h = 11q - 2p$ or equivalent $h = \frac{11q + 3p - 5p}{7}$ or equivalent $h = \frac{11q - 2p}{7}$ or $h = \frac{2p - 11q}{-7}$	B1 B1  B1	Sight of $7h = 11q + 8p$ is 1 error (then FT) FT until 2 <sup>nd</sup> error  Implies previous B2. Mark final answer
(b) $ef - kf = t + d$ OR $-d - t = kf - ef$ $f(e - k) = t + d$ OR $-d - t = f(k - e)$ $f = \frac{t + d}{e - k}$ OR $\frac{-d - t}{k - e} = f$	B1 B1 B1	FT until 2 <sup>nd</sup> error
	6	

2.

2015 Summer Linear Paper 2 Higher Tier		Comments
8(a) $k^2 = m/3$ $k = (\pm)\sqrt{m/3}$	B1 B1	Clearly must show square root of $m/3$ entirely FT from 1 error, e.g. $k^2 = m-3$ to give $k = (\pm)\sqrt{m - 3}$ (B0, B1) or $3k = \sqrt{m}$ to give $k = (\pm)\sqrt{m/3}$ (B0, B1)
8(b) $g(e + f) = h$ OR $e + f = h/g$ $g = \frac{h}{e + f}$	B1 B1	Factorise FT from 1 error provided equivalent difficulty (not single term denominator), e.g. from incorrectly factorising as $2g(e+f) = h$ to give a response $g = h/2(e+f)$ is awarded B0, B1

3.

$ax - ab = cx - dx$ $ax - cx + dx = ab$ NEU $-ab = cx - dx - ax$ $x(a - c + d) = ab$ NEU $-ab = x(c - d - a)$ $x = \frac{ab}{a - c + d}$ NEU $-ab/(c - d - a) = x$ neu $\frac{ab}{a - c + d}$ neu $\frac{-ab}{c - d - a}$	✓ ✓ ✓ ✓	B1 B1 B1 B1	Dilyn trwodd hyd at 2 <sup>l</sup> wall ar gyfer lefel gywerth o anhawster.  Neu gywerth. Neu gywerth. Neu gywerth. Peidio â derbyn $-x = ab/(c - d - a)$  <u>Dull arall</u> $ax - ab = x(c - d)$ B1 Dim ond dyfarnu'r B1 cyntaf $-ab = x(c - d) - ax$ B1 os rhoddir cynnig $-ab = x(c - d - a)$ B1 ar yr 2 <sup>l</sup> gam. $-ab/(c - d - a) = x$ B1
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4.

10.(a) $y^2 = g + t$ $y = (\pm)\sqrt{(g+t)}$	B1 B1	FT from $y^2 = g + t$ to $y = (\pm)\sqrt{(g+t)}$
10(b) $3y + w = 10y + 15$ $3y - 10y = 15 - w$ OR $w - 15 = 10y - 3y$ $-7y = 15 - w$ OR $w - 15 = 7y$ $y = \frac{15 - w}{-7}$ OR $y = \frac{w - 15}{7}$	B1 B1 B1 B1	Includes correct expansion FT until 2 <sup>nd</sup> error  FT if total of y terms has not been simplified. Mark final answer

5.

$3w - 7w = x + 7t$  $w(3 - 7) = x + 7t$ $w = \frac{x + 7t}{3 - 7}$ or equivalent	B1  B1 B1  3	FT until 2 <sup>nd</sup> error. Collecting terms. Factorising Quotient. Mark final answer.
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6.

(a) $5w = h - t$ $w = \frac{h-t}{5}$ or equivalent	B1 B1	FT from $5w = h + t$ or similar 1 error made  <i>Award B1, B0 for an answer of <math>w = h - t \div 5</math></i>
(b) $aw + 3 = 4bw + 20$ $aw - 4bw = 20 - 3$ OR $3 - 20 = 4bw - aw$ $w(a - 4b) = 17$ OR $-17 = w(4b - a)$ $w = \frac{17}{a - 4b}$ OR $\frac{-17}{4b - a} = w$	B1 B1 B1 B1	Includes correct expansion FT until 2 <sup>nd</sup> error  Mark final answer. Do not accept a numerator $20 - 3$

7.

12. $5h + 3k = 2h + 8$ $5h - 2h = 8 - 3k$ $3h = 8 - 3k$ $h = (8 - 3k)/3$ or equivalent	B1 B1 B1 B1 4	Includes correct expansion. FT until 2 <sup>nd</sup> error.  Mark final answer.
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8.

10.(a) Method, equating coefficients or alternative First variable correct Method to find second variable Second variable correct (b) $11(3 + x) + 2(2x - 1) = 13 \times 2 \times 11$  $15x + 31 = 286$ $x = 17$ (c) $7r - ar = b - c$ $r(7 - a) = b - c$ $r = (b - c)/(7 - a)$ or equivalent	M1 A1 M1 A1 M2  A1 A1 B1 B1 B1 11	Allow 1 slip, but not in equated coeffs. $x = 11$ $y = -3$ FT their first variable  No M mark if left as quotient M1 for 2 of these 3 terms correct FT from M1 for A1 only CAO (Must be simplified) Like terms <i>FT until second error</i> Factorise Isolate
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9.

$14160 = \frac{2.65 \times 8000 - C}{1.25}$  $(C =) \frac{2.65 \times 8000 - 1.25 \times 14160}{(21200 - 17700)}$ $= (£) 3500$	B1  M1 A1	For correct substitution into given formula. Also B1 for $14160 = \frac{21200 - C}{1.25}$  Allow $1.25 \times 14160 - 2.65 \times 8000 (= -C)$  CAO If B1 not awarded allow SC1 for (£)2800.
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10.

7. $100 = 20 \times 4 + \frac{1}{2} \times a \times 4^2$  $a = \frac{100 - 20 \times 4}{4^2} \times 2$  $= 2.5 \text{ (ms}^{-2}\text{)}$	B1  B1 B1	For correct substitution.  Allow for correct intent.  C.A.O. Accept an embedded answer.
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