

Polygonau Amllder

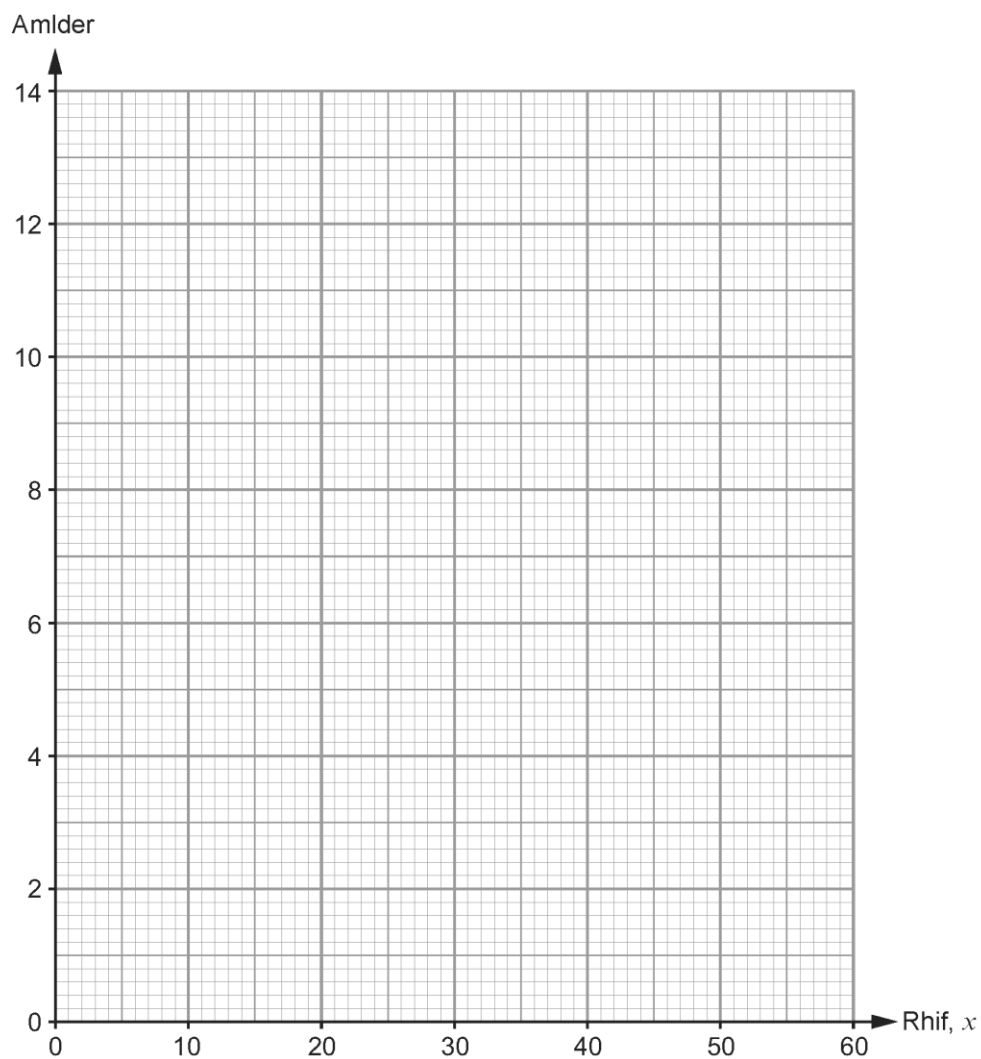
1.

Mae rhestr o 50 rhif wedi cael ei chrynhai yn y tabl amllder grŵp isod.

Rhif, x	Amllder
$0 \leq x < 10$	3
$10 \leq x < 20$	5
$20 \leq x < 30$	9
$30 \leq x < 40$	13
$40 \leq x < 50$	12
$50 \leq x < 60$	8

(a) Lluniadwch bolygon amllder i ddangos y data hyn.

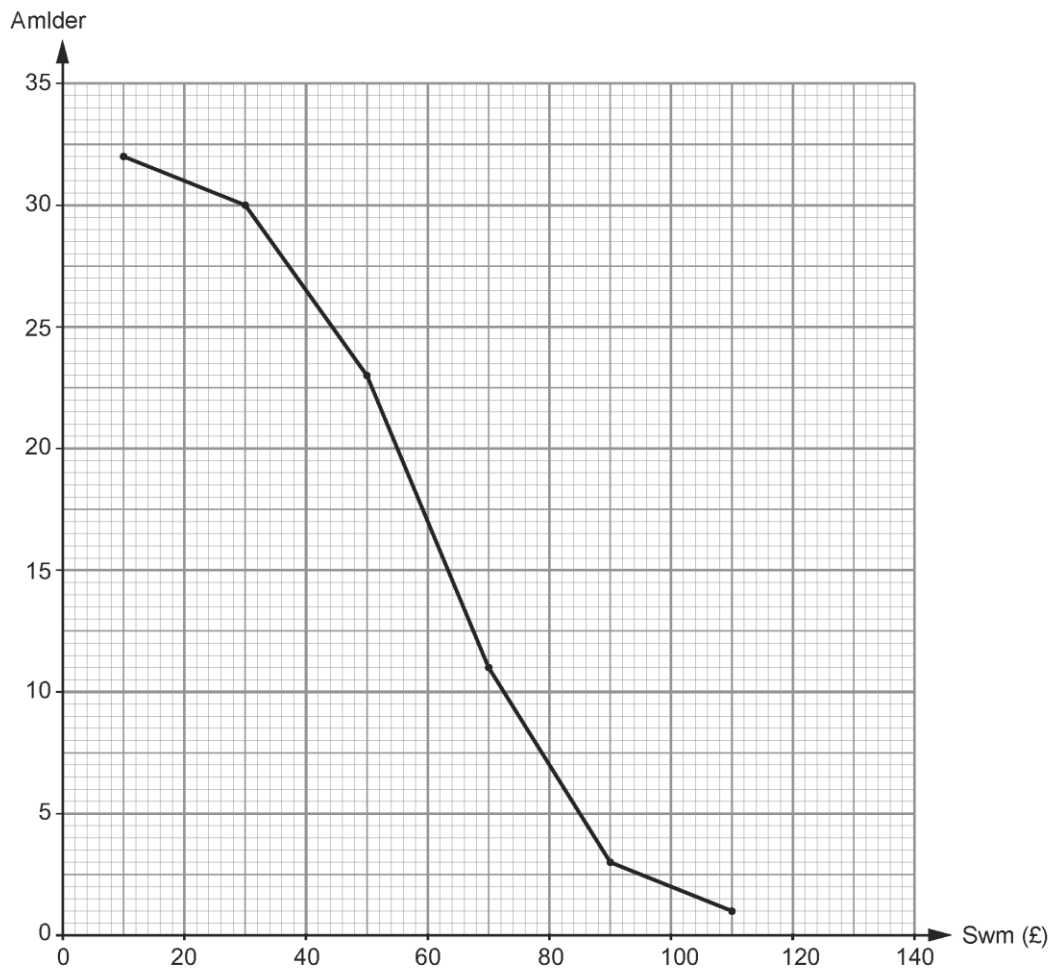
[2]



(b) Ysgrifennwch y grŵp sy'n cynnwys y canolrif.

[1]

2. Mae'r polygon amlder isod yn dangos y swm o arian gwnaeth 100 o gwsmeriaid ei wario mewn uwchfarchnad un bore Llun.



Mae'r swm o arian gwnaeth 100 arall o gwsmeriaid ei wario yn yr un uwchfarchnad ar brynhawn Sadwrn yn cael ei ddangos isod.

Swm, s (£)	Amllder
$0 < s \leq 20$	5
$20 < s \leq 40$	19
$40 < s \leq 60$	34
$60 < s \leq 80$	12
$80 < s \leq 100$	12
$100 < s \leq 120$	10
$120 < s \leq 140$	8

- (a) Ar yr un **paper graff**, lluniadwch bolygon amlder i ddangos y swm o arian gwnaeth y cwsmeriaid ei wario ar y prynhawn Sadwrn. [2]
- (b) Defnyddiwch y ddau bolygon amlder i wneud un gymhariaeth rhwng y swm gafodd ei wario ar fore Llun a'r swm gafodd ei wario ar brynhawn Sadwrn. [1]

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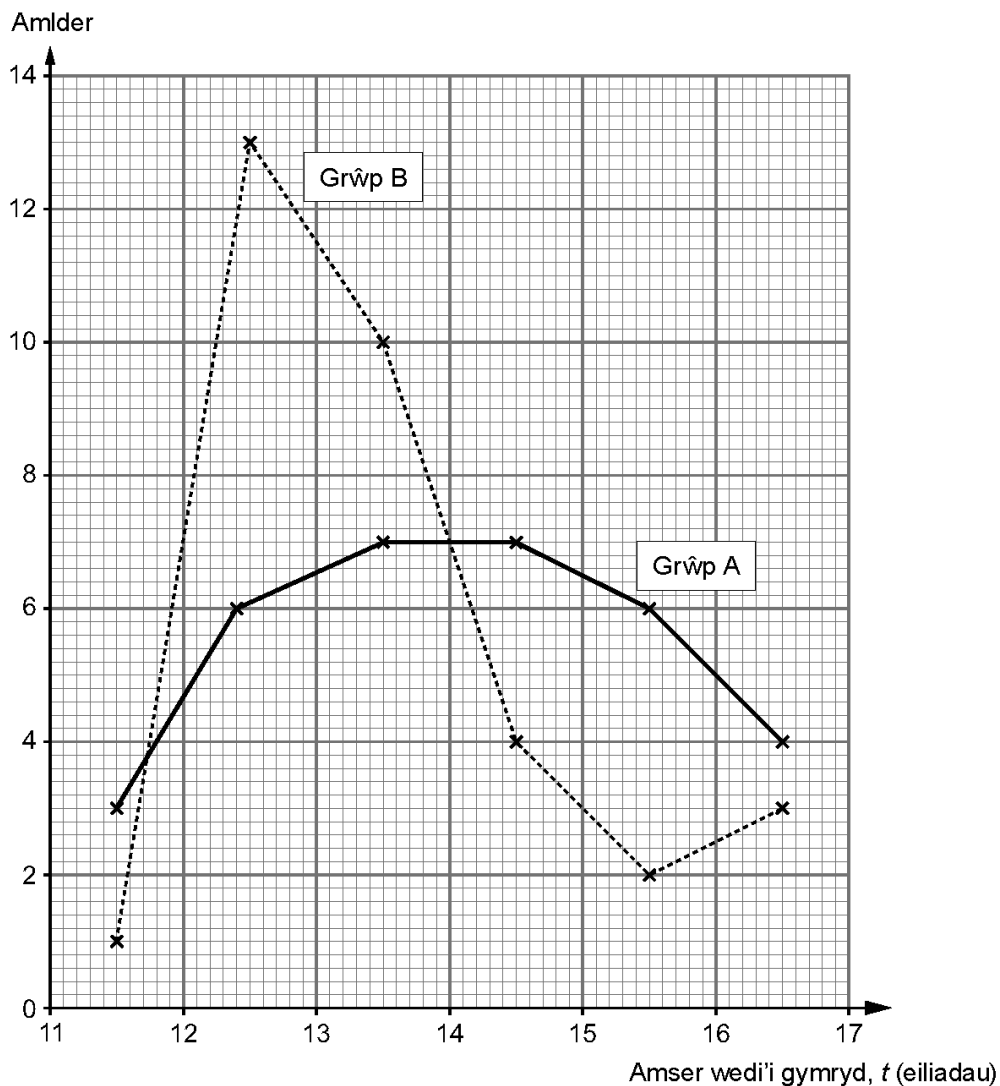
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3.

Un wythnos, cofnododd yr athro addysg gorfforol yr amserau wedi'u cymryd gan ddisgyblion o ddau ddsbarth addysg gorfforol i redeg 100 metr. Mae'r polygonau amlder yn dangos y canlyniadau gafodd yr athro.



- (a) Roedd gwobr yn mynd i gael ei rhoi i un o'r grwpiau. Rhoddodd yr athro addysg gorfforol y wobr i Grŵp B. Heb wneud unrhyw waith cyfrifo, rhwng reswm posibl pam penderfynodd yr athro addysg gorfforol roi'r wobr i Grŵp B. [1]

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- (b) Y cyfwng dosbarth (*class interval*) sy'n cynnwys y canolrif ar gyfer Grŵp B oedd $13 \leq t < 14$ eiliad. Darganfyddwch y cyfwng dosbarth sy'n cynnwys y canolrif ar gyfer Grŵp A. [1]

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- (c) Yr amser canolrifol ar gyfer Grŵp B oedd 13.3 eiliad. Yr wythnos ganlynol ymunodd dau ddisgybl newydd â Grŵp B, ond pan gafodd eu hamserau nhw ar gyfer rhedeg 100 metr eu cofnodi, sylwodd yr athro addysg gorfforol nad oedd yr amser canolrifol ar gyfer y grŵp yn newid.

Eglurwch sut gallai hyn fod wedi digwydd. [1]

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4.

- (a) Yn Bilchbach, cafodd y glawiad am bob un o 10 diwrnod ei fesur. Mae'r canlyniadau wedi'u crynhoi yn y tabl isod.

Glawiad dyddiol, r (mm)	Nifer y diwrnodau
$4.5 \leq r < 5.5$	4
$5.5 \leq r < 6.5$	2
$6.5 \leq r < 7.5$	0
$7.5 \leq r < 8.5$	2
$8.5 \leq r < 9.5$	2

- (i) Cyfrifwch amcangyfrif ar gyfer y glawiad dyddiol cymedrig am y 10 diwrnod. [4]

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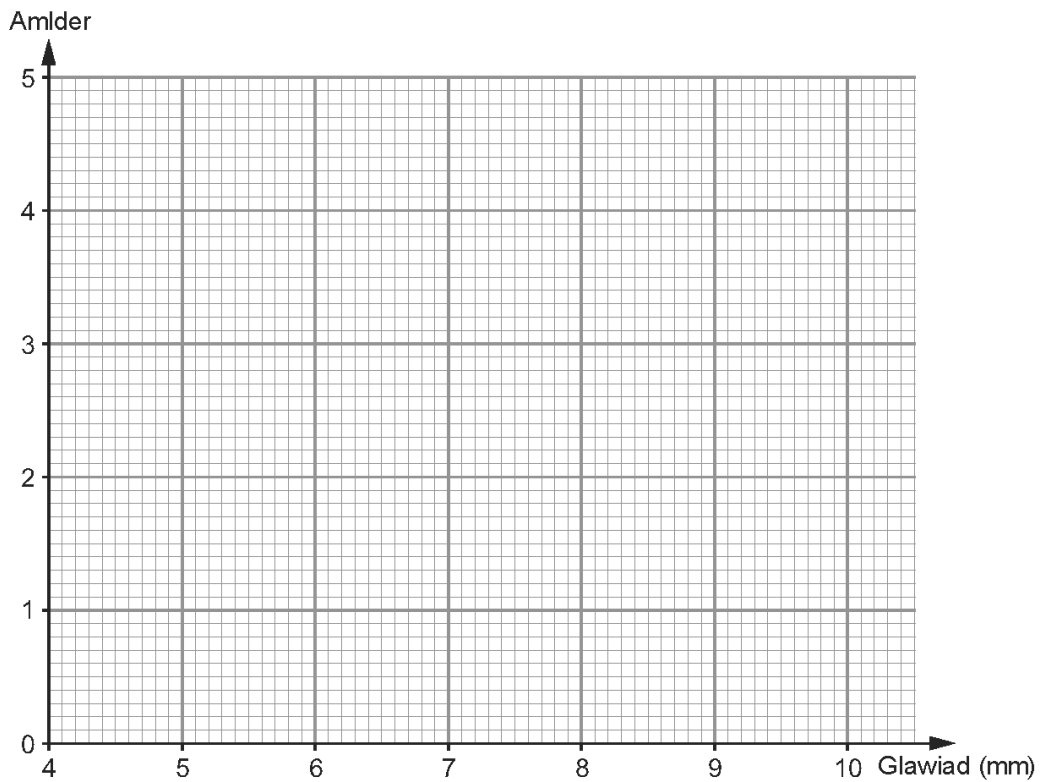
- (ii) Nodwch y dosbarth modd. [1]

Dosbarth modd

- (iii) Ysgrifennwch y dosbarth sydd â'r canolrif ynddo. [1]

Dosbarth canolrifol

(b) Ar y papur graff isod, lluniadwch (*draw*) bolygon amllder i ddangos y data glawiad hyn. [2]



5.

(a) Cafodd hydoedd 100 o bysgod eu cofnodi. Mae'r canlyniadau wedi'u crynhoi yn y tabl isod.

Hyd, l cm	Amllder
$0 < l \leq 8$	15
$8 < l \leq 16$	67
$16 < l \leq 24$	18

Darganfyddwch amcangyfrif ar gyfer hyd cymedrig y pysgod hyn.

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[4]

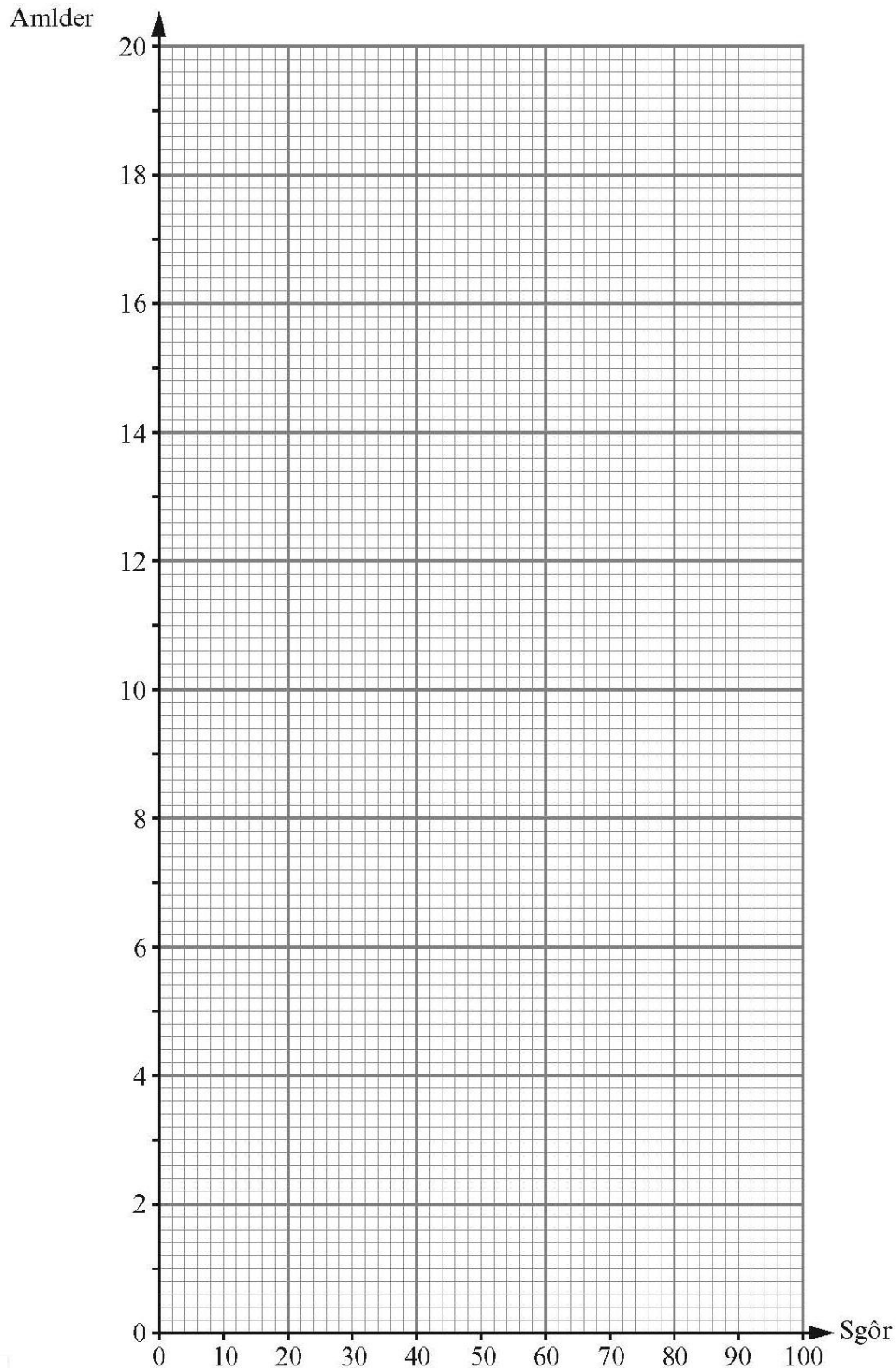
(b) Cafodd y pwyntiau gafodd eu sgorio gan 40 o bysgotwyr mewn cystadleuaeth eu cofnodi.

Mae'r tabl yn dangos dosraniad amlder grŵp o'r canlyniadau.

Sgôr	1 i 20	21 i 40	41 i 60	61 i 80	81 i 100
Amllder	4	16	12	6	2

Ar y papur graff isod, lluniadwch (*draw*) bolygon amlder i ddangos y data.

[2]



Trosodd.

6.

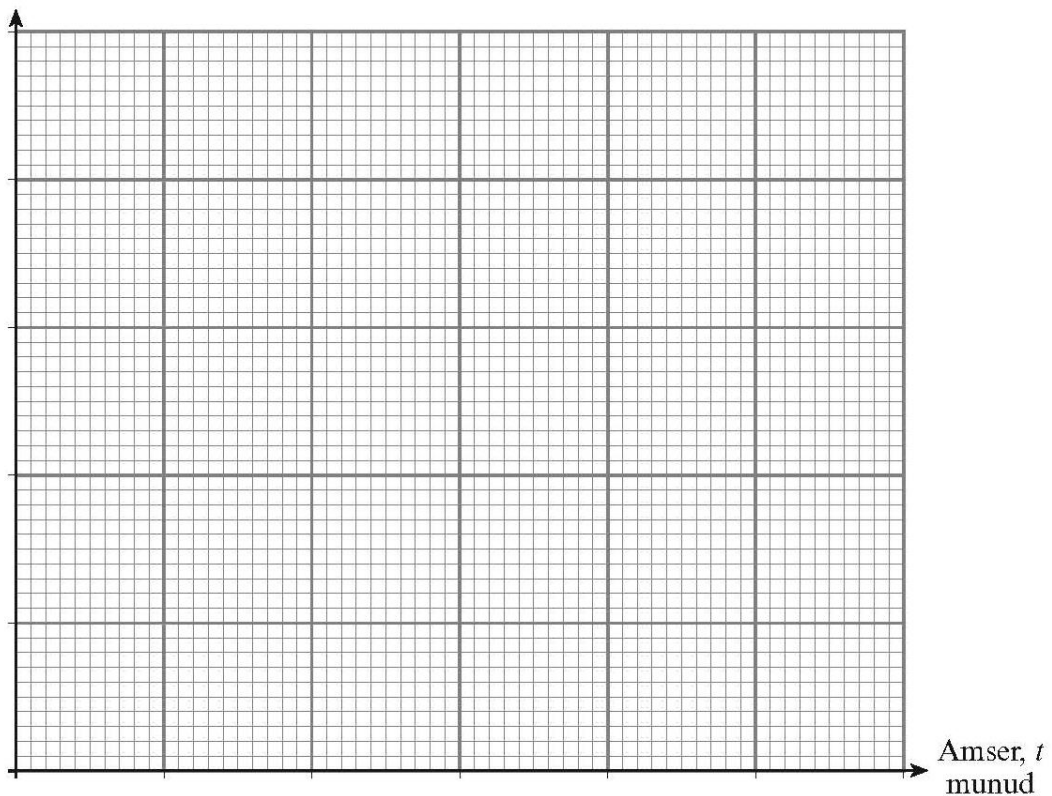
- (a) Un dydd Sadwrn cofnododd perchennog caffi rhyngrwyd yr amser a dreuliodd pob un o 100 o gwsmeriaid yn ateb e-byst (*e-mails*). Mae'r tabl isod yn dangos crynodeb o'r canlyniadau.

Amser, t munud	Amllder
$0 < t \leq 10$	23
$10 < t \leq 20$	27
$20 < t \leq 30$	32
$30 < t \leq 40$	16
$40 < t \leq 50$	2

Ar y papur graff isod, lluniadwch (*draw*) bolygon amllder ar gyfer y data hyn.

[3]

Amllder



- (b) Cwblhewch y tabl amllder cronus ar gyfer yr amserau a gafodd eu treulio yn ateb e-byst.

Amser, t munud	$t = 0$	$t \leq 10$	$t \leq 20$	$t \leq 30$	$t \leq 40$	$t \leq 50$
Amllder cronus	0					

[1]

- (c) Ysgrifennwch amcangyfrif ar gyfer yr amser canolrifol a dreuliodd cwsmeriaid yn ateb e-byst.

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[1]

Cynllun Marcio

1.

Use overlay. (a) Points plotted at mid-points of groups and straight lines connecting the points.	B2	B1 for at least 4 points plotted and joined correctly OR for all points plotted correctly but not joined. Accept intention of straight lines. Ignore any lines outside the first and last points.
To be viewed with frequency table. (b) $30 \leq x < 40$	B1	

2.

17. a) Points plotted at mid-points of groups and straight lines connecting the points	B2	B1 at least 4 points plotted and joined correctly OR for all points plotted correctly but not joined, OR consistent horizontal translation within the limits of the groups. Accept intention of straight lines. Ignore any lines outside the first and last points.
b) Appropriate comment that compares purchases made on Monday and Saturday.	E1	E.g. "More low value purchases on a Monday morning", "More money is spent on a Saturday afternoon".
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3.

Unitised Unit 3 – Nov 2015 Higher Tier		FINAL MARK SCHEME Comments
7. (a) e.g. 'More pupils from Group B ran a quicker time' or 'In Group B many more pupils ran faster than 14 seconds than ran slower than 14 seconds'. (b) $14 \leq t < 15$ (c) e.g. "One was faster and one was slower than the median" OR "both pupils times were 13.3 (seconds)".	E1 B1 E1 3	Accept 14 – 15 (seconds). Accept either reason.

4.

2015 Summer Linear Paper 2 Higher Tier		Comments
4(a)(i) Mid-points 5,6,7,8,9 $5 \times 4 + 6 \times 2 + 7 \times 0 + 8 \times 2 + 9 \times 2$ $\div 10$ 6.6(mm)	B1 M1 m1 A1	FT their mid points including bounds provided they fall within the classes. $20 + 12 + 0 + 16 + 18 (= 66)$ Intention their $\sum fx / 10$ For correct evaluation of their $\sum fx / 10$
4(a)(ii) Modal class $4.5 \leq r < 5.5$	B1	Accept '4.5 to 5.5' or other unambiguous indication of the group Do not accept 5
4(a)(iii) Median $5.5 \leq r < 6.5$	B1	Accept '5.5 to 6.5' or other unambiguous indication of the group Do not accept 6
4(b) Correct frequency polygon (for range of data given)	B2	If B2, penalise -1 if joined to any other point (apart from at (7, 0)) on horizontal axis other than (4, 0) and (10, 0) Must be accurate, indication to be on the horizontal grid line and on the vertical grid line B1 if joined with curve or not joined OR one plot incorrect within the polygon OR if translated provided the polygon is at the bounds or within the bounds for the group <i>Ignore frequency diagram as working</i>

5.

<p>5.(a) Mid points 4, 12 and 20 $(15 \times 4 + 67 \times 12 + 18 \times 20)$ (OR $60 + 804 + 360 = 1224$)</p> <p style="text-align: center;">100</p> <p style="text-align: center;">= 12.2(4)</p> <p>(b) Polygon with at least 3 vertices correctly plotted (vertical & horizontal) All 5 vertices of the polygon correct</p>	<p>B1 M1 m1 A1 M1 A1 6</p>	<p>Two shown is sufficient if no error Attempt $\sum fx$ for their mid-points that fall within the intervals including bounds Attempt their $\sum fx$ divided by 100 CAO. Accept 12 only if all working shown No polygon M0. Ignore bars. Mid points - allow intention (e.g. from 10 to 12 inclusion) SCI for a correct polygon translated horizontally or all correct plots with no polygon (or curved polygon!). Ignore joining to axis or to form a complete shape</p>
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6.

<p>6.(a) Suitable axes, with uniform scales Polygon with at least 3 vertices correctly plotted (vertical & horizontal) All 5 vertices of the polygon correct</p> <p>(b) Entries 23, 50, 82, 98, 100 (c) 20 (minutes)</p>	<p>B1 M1 A1 B1 B1 5</p>	<p>Must be values only not ranges. No polygon M0. Ignore bars. Mid points - allow intention SCI for a correct polygon translated horizontally or all correct plots with no polygon (or curved polygon!) Do not accept an interval</p>
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