

CENTRAL KENYA NATIONAL SCHOOLS JOINT MOCK - 2015
121/1 MATHEMATICS PAPER 1 - MARKING SCHEME

1.
$$\frac{72}{-24} - \frac{64 \times -12 - 24}{\frac{-96}{12} \times 9}$$

$$-3 - \frac{-768 - 24}{-8 \times 9}$$
M1

$$-3 - \frac{-792}{-72}$$

$$-3 - 11 = -14$$
A1

2. (a) 15 B1

(b)
$$\frac{15 + 15}{2}$$
M1

15 A1

3. 1.2χ M1

$1.3 \times 1.2\chi = 3120$ M1

$\chi = 2000$ A1

4. $\cos(\chi + 20) = \cos 40^\circ$ B1

$\chi + 20 = 40^\circ$ B1

$\chi = 20^\circ$

Or

$\chi + 20 = 320^\circ$ B1

$\chi = 300^\circ$

5. $2 \times 3 \times 5^2 \times 7$ B1

$P = 2 \times 3 \times 7$ M1

42 A1

6. $\chi - 50 + 2\chi + 20 = 180$ M1

$3\chi = 210^\circ \quad \chi = 70$

$70 - 50 = 20$

No of side $\frac{360}{20}$ M1

$= 18$ A1

7. $5 = \frac{-3}{4}\chi - 2 + C \Rightarrow 5 - \frac{-3}{2} = \frac{7}{2}$ M1

$y = \frac{-3}{4}\chi + \frac{7}{2}$

$\frac{1}{2} = \frac{-3}{4}\chi + \frac{7}{2}$

$-3 = \frac{-3}{4}\chi \quad \chi = 4$ M1

$\left(4, \frac{1}{2}\right)$

$\perp \frac{1}{2} = \frac{4}{3} \times 4 + C$ B1

$\frac{1}{2} - \frac{16}{3} = C = \frac{3 - 32}{6}$

$$y = \frac{4}{3}x - \frac{29}{6} \quad \text{A1}$$

8.
$$\frac{(x-2y)[x+2y-(x-2y)]}{(x-2y)(x+2y)} \quad \text{M1}$$

$$\frac{x-x+2y+2y}{x+2y} = \frac{4y}{x+2y} \quad \text{B1}$$

A1

9. 324: 768
27: 64 V.R
3: 4 L.R M1

(a) $20 \times \frac{20 \times 3}{4} = 15 \quad \text{A1}$

(b) $9: 16 \quad \frac{40 \times 9}{16} = 22.25 \quad \text{M1}$
y 40 A1

10. $\frac{22}{7} \times 2.1 \times 2.1 - \frac{22}{7} \times 1.4 \times 1.4 \quad \text{M1}$

$$\frac{7.7 \times 500}{7.7 \times 500 \times 1.45} \quad \text{M1} \quad \text{Volume}$$

$$\frac{1000}{5.5825\text{kg}} \quad \text{M1}$$

A1

11.
$$\frac{2^{-5 \times \frac{1}{5}} \times 3^3 \times 2^{\frac{1}{2}} \times 5^{\frac{1}{2}} \times 2^{\frac{3}{2}}}{5^{\frac{1}{2}} \times 2^{\frac{1}{2}}} \quad \text{M1}$$

$$2^{\frac{-1}{2}} + \frac{1}{2} + \frac{3^{\frac{1}{2}}}{2} \times 3^3 \quad \text{B1}$$

$$2^{\frac{3}{2}} \times 3^3 \text{ or } 54 \quad \text{A1}$$

12. $\angle QSR = 55^\circ \Rightarrow \angle QRS = 180 - 110^\circ \quad \text{M1}$
 $\angle SPQ = \angle QRS = 70^\circ \Rightarrow \angle TPS = 110^\circ$
 $\angle PST = 90 - 55^\circ = 35^\circ \quad \text{M1}$
 Angles of triangle TPS $180 - 35 - 110^\circ = 35^\circ \quad \text{A1}$

13. $\frac{5}{8} \times 72 = 45\text{kg} \quad \text{M1}$
A1

14.

48	60	$2^4 \times 3 \times 5 = 240$
2	24	
2	12	
2	6	
2	3	
3	1	
5		$2.4 \times 2.4\text{m}^2$ 5.76m^2

M1

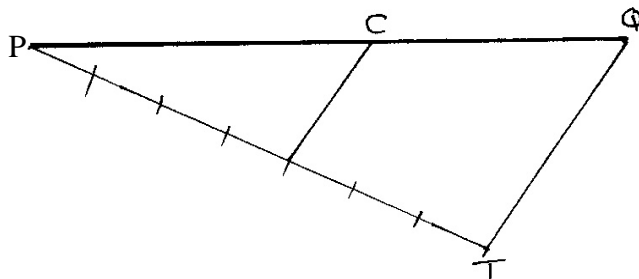
B1

A1

B1

15. $y < \frac{-3}{5}x + 3 \quad \text{B1}$
 $y \leq x - 3 \quad \text{B1}$

16.



SECTION II

17. (a) $\frac{48000 \times 96 \times 49}{48 \times 28}$ M1 Numerator
 $= 168,000$ M1 Denominator
 A1
- (b) $6000 \times \frac{96}{8}$ M1
 $168,000 - 72,000$ M1
 $= 96000$ A1
- (c) $48000 \times \frac{192}{48} \times \frac{84}{28}$ M1
 $= 576,000$ A1
 Transport cost = $\frac{576,000 \times 100}{144}$ M1
 $= 400,000$ A1
- 10
18. (a) χ^2 M1 Carpet area
 $2(\chi + 2) + 2\chi$ M1 Remaining part of the room
 $\chi^2 + 2(\chi + 2) + 2\chi = 64$ M1
 $(\chi - 6)(\chi + 10) = 0$ M1
 $\chi = 6$ or -10 A1
 Length = 6m B1
 Or $(\chi + 2)(\chi + 2) = 64$ M1
 $\chi^2 + 4\chi - 60 = 0$ M1
 $(\chi - 6)(\chi + 10) = 0$ M1
 $\chi = 6$ or -10 A1
 $\chi = 6$ m B1
- (b) $(y + 3)(y - 2) = 24$ M1
 $y^2 + y - 30 = 0$ M1
 $(y + 5)(y - 6) = 0$ M1
 $y = -5$ or 6 A1
- 10
19. (a) Cow cost Ksh. χ , goat cost Ksh. y
 $8\chi + 12y = 294,000$ B1
 $9\chi + 15y = 337,500$ B1
- (b) $\begin{pmatrix} 8 & 12 \\ 9 & 15 \end{pmatrix} \begin{pmatrix} \chi \\ y \end{pmatrix} = \begin{pmatrix} 294,000 \\ 337,500 \end{pmatrix}$ M1

$$\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{12} \begin{pmatrix} 15 & -12 \\ -9 & 8 \end{pmatrix} \begin{pmatrix} 294,000 \\ 337,500 \end{pmatrix} \quad \text{M1}$$

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 30,000 \\ 4,500 \end{pmatrix} \quad \text{M1}$$

Cow Ksh.30,000, goat Ksh.4,500 A1

$$\begin{aligned} \text{(i)} \quad & \frac{140}{100} \times 8 \times 30,000 + \frac{145}{100} \times 12 \times 4500 && \text{M1} \\ & = 414,300 && \text{A1} \end{aligned}$$

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$$\begin{aligned} \text{(ii)} \quad & 414,300 - 294,000 && \text{M1} \\ & = 120,300 && \text{A1} \end{aligned}$$

10

$$\begin{aligned} 20. \quad \text{(a)} \quad & \text{Truck has covered } 60 \times 2 \frac{1}{2} && \text{M1} \\ & = 150\text{km} \end{aligned}$$

$$\begin{aligned} T &= \frac{150}{40} = 3.45 \text{ min} && \text{M1} \\ &= 01415 + 3.45 && \text{M1} \\ &= 18.00\text{hrs}/6.00\text{pm} && \text{A1} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad & 2 \frac{1}{2} \times 100 = 250\text{km} && \text{M1} \\ & 500 - 250 && \text{M1} \\ & = 250\text{km} && \text{A1} \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad & \text{Car took 2hrs} && \\ & \text{Car reached at 1845hrs or 6.45pm} && \text{B1} \quad \text{For both} \\ & \text{Truck reached at 1935hrs or 7.35pm} && \\ & 1935 - 1845 && \text{M1} \\ & = 50 \text{ minutes} && \text{A1} \end{aligned}$$

10

$$\begin{aligned} 21. \quad \text{(a)} \quad & \frac{ds}{dt} = 6t^2 - 10t + 4 && \text{M1} \\ & t = 2 && \\ & V = 6 \times 2^2 - 10 \times 2 + 4 && \text{M1} \\ & = 4\text{m/s} && \text{A1} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad & 6t^2 - 10t + 4 = 0 && \text{M1} \\ & 6t^2 - 4t - 6t + 4 = 0 && \\ & 2t(3t - 2) - 2(3t - 2) = 0 && \\ & (3t - 2)(2t - 2) = 0 && \text{M1} \\ & t = \frac{2}{3} \text{ or } 1 && \text{A1} \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad & S = 3 \text{ metres or} && \text{B1} \\ & 3 \frac{1}{27} \text{ metres} && \text{B1} \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad & a = 12t - 10 && \text{M1} \\ & = 50\text{m/s}^2 && \text{A1} \end{aligned}$$

22. (a) (i) $\underline{b} - \underline{a}$ B1
 (ii) $\underline{3b} - \underline{a}$ B1
- (b) $OM = \underline{a} + \frac{3}{4}(\underline{b} - \underline{a})$ M1
 $\frac{1}{4}\underline{a} + \frac{3}{4}\underline{b}$ A1
 $OM = \underline{a} + \frac{3}{4}(\underline{b} - \underline{a})$ M1
 $\frac{1}{2}\underline{a} + \frac{3}{2}\underline{b}$ A1

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- (c) $\underline{ON} = K\underline{OM}$
 $\frac{1}{2}\underline{a} + \frac{3}{2}\underline{b} = K\left(\frac{1}{4}\underline{a} + \frac{3}{4}\underline{b}\right)$ M1
 $K = 2$ A1
 $\underline{ON} = 2\underline{OM}$
 $\underline{ON} \parallel \underline{OM}$ B1
 O is common B1
 Hence O, M, N are collinear

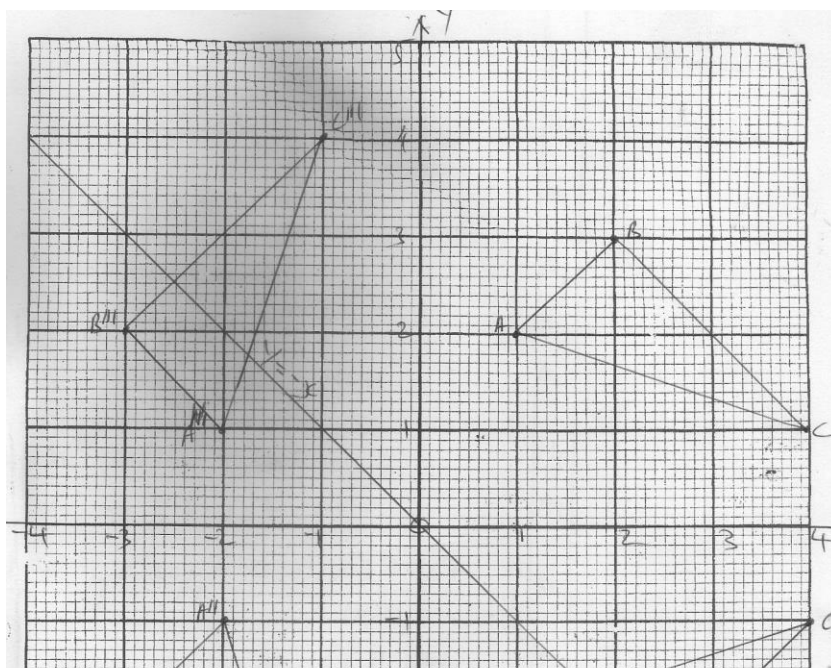
23. (a) ΔABC ✓ drawn B1
 $\Delta A^1B^1C^1$ ✓ drawn B1
 (b) Reflection, line $y = 0$ or x -axis B2
 (c) Line $y = -x$ drawn B1
 $\Delta A^{11}B^{11}C^{11}$ ✓ drawn B1
 (d) $\Delta A^{111}B^{111}C^{111}$ ✓ drawn B2
 (e) Using the unit square

$$m = \begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$$

Alternative

$$M1A1 \begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} 1 & 2 & 4 \\ 2 & 3 & 1 \end{pmatrix} = \begin{pmatrix} -2 & -3 & -1 \\ 1 & 2 & 4 \end{pmatrix} M1$$

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} = \begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix} A1$$



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24. (a) (i) $\frac{126}{360} \times \frac{22}{7} \times 2 \times 40$ M1
 $= 88\text{cm}$ A1
- (ii) $\frac{126}{360} \times \frac{22}{7} \times 40 \times 40$ M1
 $= 1760\text{cm}^2$ A1
- (b) (i) $2 \times \frac{22}{7} \times r = 88$ M1
 $r = 14\text{cm}$ A1
- (ii) $h = \sqrt{40^2 - 14^2}$ M1
 $= 37.47\text{cm}$ A1
- (iii) $\frac{1}{3} \times \frac{22}{7} \times \frac{14 \times 14 \times 37.47}{1000}$ M1
 $= 7.669 \text{ litres}$ A1

10

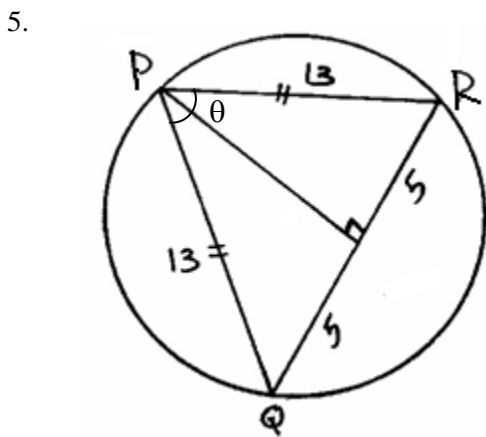
CENTRAL KENYA NATIONAL SCHOOLS JOINT MOCK - 2015
121/2 MATHEMATICS PAPER 2 - MARKING SCHEME

1. $\frac{9}{4} - \frac{5}{3} = \frac{27 - 20}{12} = \frac{7}{12}$ B1
 $\frac{1}{6} - \frac{1}{9} = \frac{3 - 2}{18} = \frac{1}{18}$ B1
 $\frac{7}{12} \times \frac{18}{1} = \frac{21}{2}$ B1
 $\frac{21}{2} - \frac{15}{8} = \frac{84 - 15}{8} = \frac{69}{8} = 8\frac{5}{8}$ A1

2. $2^4 + 4 \times 2^3\chi + 6 \times 2^2\chi^2 + 4 \times \chi^3 + \chi^4$
 $16 + 32\chi + 24\chi^2 + 8\chi^3 + \chi^4$ M1
 (b) $2.01 = 2 + \chi \quad \chi = 0.01$
 $16 + 0.32 + 0.0024 + 0.000008$
 16.3224 A1

3. $\text{Log}_{10}(3y + 2) - \text{Log}_{10}^{10} = \text{Log}_{10}(y + 4)$ M1
 $\frac{3y + 2}{10} = y - 4$
 $3y + 2 = 10y - 40$ M1
 $7y = 42, y = 6$ A1

4. $E = \sqrt{\frac{P - 3u}{y - 3\chi P}}$ M1 Squaring
 $E^2 = \frac{P - 3u}{y - 3\chi P}$
 $E^2y - 3E^2\chi P = P - 3u$ M1M1 Collecting terms of P
 $E^2y + 3u = P + 3E^2\chi P$
 $\frac{E^2y + 3u}{1 + 3E^2\chi} = P$ A1



$\text{Sin } \theta = \frac{5}{13}$
 $22.62 \times 2 = 45.24^\circ$ M1

$\frac{P}{\text{Sin } P} = 2R$
 $\frac{10}{\text{Sin } 45.24} = 2R$ M1

- $2R = 14.083$
 $R = 7.042$
A1
6. $\chi^2 + y^2 - 2\chi + 4y = \frac{-3}{3}$
 $\chi^2 - 2\chi + \left(\frac{2}{2}\right)^2 + y^2 + 4y + \left(\frac{4}{2}\right)^2 = \frac{-3}{3} + \left(\frac{2}{2}\right)^2 + \left(\frac{4}{2}\right)^2$
M1 Completing of square
 $(\chi - 1)^2 + (y + 2)^2 = -1 + 1 + 4$
 $(\chi - 1)^2 + (y + 2)^2 = 2^2$
M1
 Centre (1, -2) radius 2
 A1 For centre and radius
7. AC: CB = 2AC = 5CB
 $5: -2 \quad -2(\underline{c} - \underline{a}) = 5(\underline{b} - \underline{c})$
 $-2\underline{c} + 2\underline{a} = 5\underline{b} - 5\underline{c}$
 $3\underline{c} = 5\underline{b} - 2\underline{a} \quad \underline{c} = \frac{5}{3}\underline{b} - \frac{2}{3}\underline{a}$
B1
- $\underline{C} = \frac{5}{3} \begin{pmatrix} -15 \\ 3 \\ 12 \end{pmatrix} - \frac{2}{3} \begin{pmatrix} 3 \\ -6 \\ 9 \end{pmatrix}$
B1
- $\begin{pmatrix} -25 \\ 5 \\ 20 \end{pmatrix} - \begin{pmatrix} 2 \\ -4 \\ 6 \end{pmatrix} = \begin{pmatrix} -23 \\ 9 \\ 14 \end{pmatrix}$
 (-23, 9, 14)
 A1
8.

	2	3	5	7
2	22	32	52	72
3	23	33	53	73
5	25	35	55	75
7	27	37	57	77

B1
- (b) $\frac{4}{16}$ or $\frac{1}{4}$
B1
9. $4158 \times 10^6 = \frac{22}{7} \times 3.5^2 \times 150 \times 8 \times 60 \times 60 \times d$
M1
- $\frac{4158 \times 10^6}{\frac{22}{7} \times 3.5^2 \times 150 \times 60 \times 60} = 25 \text{ day}$
M1
- A1
10. Kana d = 8000, a = 40,000
 M1
- $40,000 + 5 \times 8000 = 80,000$
- Jane r = 1.2
 M1
- $40000(1.2^5) = 40000 \times 2.488$
- 99533
M1
- 19533
A1
11. $\frac{dy}{d\chi} = 2\chi - 1$
M1
- $y = \chi^2 - \chi + C$
- $5 = 1 - 1 + C \quad C = 5$
M1
- $Y = \chi^2 - \chi + 5$
A1

$$12. \frac{3(\sqrt{7} + \sqrt{2}) - 2(\sqrt{7} - \sqrt{2})}{(\sqrt{7} - \sqrt{2})(\sqrt{7} + \sqrt{2})} = \frac{3\sqrt{7} + 3\sqrt{2} - 2\sqrt{7} + 2\sqrt{2}}{7 - 2}$$

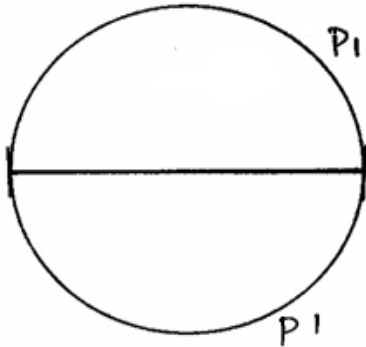
$$\frac{\sqrt{7} + 5\sqrt{2}}{5}$$

M1 For L.C.M
 M1 Correct bracket
 A1

Mathematics P2MS

2

13. *Cekenas Joint Mock*
 Both sides
 Radius 3cm



$$14. A = P\left(1 - \frac{V}{100}\right)^n$$

$$250,000 = 500,000\left(1 - \frac{12}{100}\right)^n$$

$$0.5 = 0.88^n \log 0.5 = n \log 0.88$$

$$n = \frac{\text{Log } 0.5}{\text{Log } 0.88} = 5.422 \text{ yrs}$$

M1
 M1
 A1

$$15. 4 \times 5 = 2.5 \times \chi$$

$$\chi = \frac{20}{2.5} = 8 \text{ cm}$$

M1
 A1

2

$$16. \frac{2(0.1)}{4 - 0.1} = \frac{0.2}{3.9}$$

$$\frac{0.2}{3.9} = \frac{2}{39}$$

B1
 M1
 A1

SECTION II

$$17. (a) 71 \times 60 \times \text{Cos } 60$$

$$= 2130 \text{ n.m}$$

M1
 A1

$$(b) 71 \times 4 \text{ mins} = 284 \text{ min}$$

$$4 \text{ hrs} = 44 \text{ min}$$

$$1300 - 4 \text{ hrs } 44 \text{ min}$$

$$= 8.16 \text{ am}$$

B1
 A1

$$(c) \frac{\theta}{360} \times 2R \text{ Cos } \theta \times \frac{22}{7}$$

$$\frac{71}{360} \times 2 \times 6370 \times \text{Cos } 60 \times \frac{22}{7}$$

$$= 3948.39 \text{ KM}$$

M1
 A1

$$(d) \frac{\theta}{360} \times 2 \times \frac{22}{7} \times 6370 = 10010$$

$$\theta = \frac{10010 \times 7 \times 360}{2 \times 22 \times 6370}$$

B1
 M1

$= 90^\circ$
 (30°S, 42°W)

M1
 A1

Mathematics P2MS

3

Cekenas Joint Mock

18. (a) $\angle BCD = 35^\circ + 45^\circ$
 $= 80^\circ$

B1

$\angle S$ in a semi-circle $\frac{180^\circ - 90^\circ}{2} = 45^\circ$

(b) $\angle BOD = 2 \angle BCD$
 $= 2 \times 80^\circ$
 $= 160^\circ$

$\angle S$ sub at centre of a circle is circm.

B1

(c) $\angle BAD = 180^\circ - \angle BCD$
 $= 180^\circ - 80^\circ$
 $= 100^\circ$

B1

B1

Opp. $\angle S$ of cyclic quad are supp.

(d) $\angle CGD = 180^\circ - \angle CAD$
 $= 180^\circ - 55^\circ$
 $= 125^\circ$

B1

Opp. $\angle S$ of cyclic quad are supp.

B1

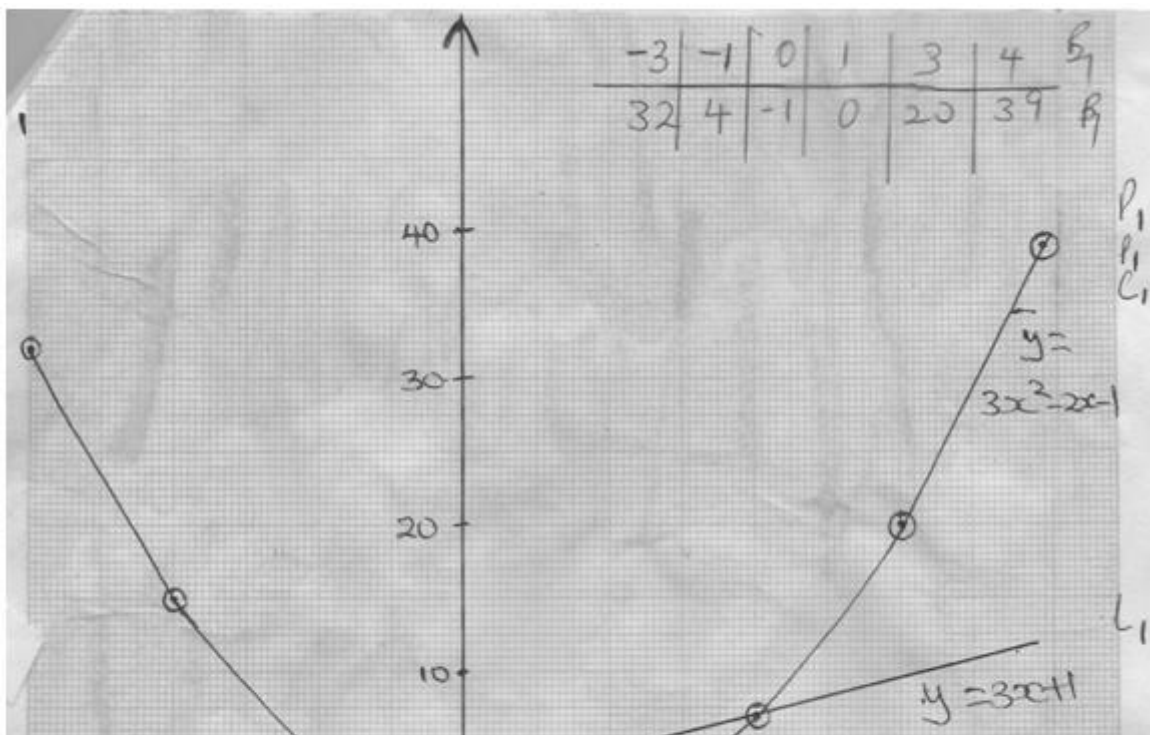
(e) $\angle AEB = 180^\circ - (100^\circ - 45^\circ)$
 $= 35^\circ$

B1

Sum of interior angles of D is supp.

B1

19.



(c)

$$y = 3x + 1$$

x	0	2
y	4	7

$$x_1 = -0.5 \pm 0.1 -$$

$$x_2 = 2 \pm 1$$

B1

B1

(d)

$$\left(x + \frac{1}{2}\right)(x - 2) = 0$$

M1

$$x^2 - 2x + \frac{1}{2}x - 1 = 0$$

$$x^2 - \frac{3}{2}x - 1 = 0$$

A1

20. (a) (i) $OP = \frac{1}{2}(\sqrt{3^2 + 4^2}) = 2.5$

M1

$$= \sqrt{6^2 + 2.5^2} = 6.964$$

M1A1

(ii) $\tan \theta = \frac{6}{2} = 3$

M1

$$\tan^{-1} \theta = 6.3$$

A1

$$\theta = 71.56^\circ$$

(b) (i) Slant height VM

$$6^2 + 2^2$$

$$= \sqrt{40} = 6.325$$

A1

$$VN = \sqrt{6^2 + 1.5^2}$$

$$= 6.185$$

A1

(ii) Area of PQRS + 2(PQV) + 2(VQR)

$$(3 \times 4) + \left(\frac{1}{2} \times 2 \times 6.325 \times 3\right) + \left(2 \times \frac{1}{2} \times 6.188 \times 4\right)$$

$$= 12 + 18.98 + 24.74$$

$$= 55.72$$

Mathematics P2MS

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21.(a)

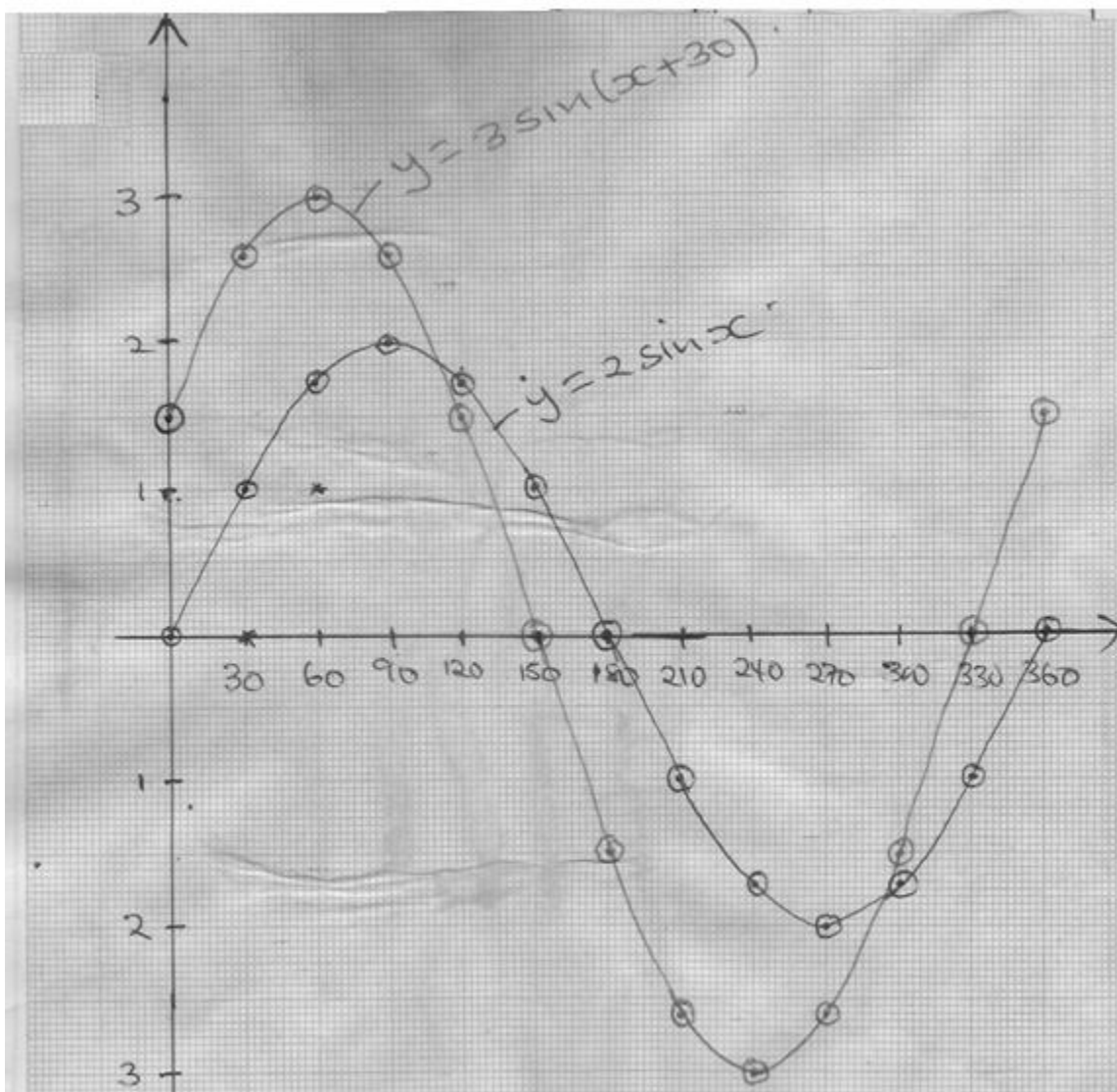
χ°	0	30	60	90	150	210	240	270
$y = 2 \sin \chi$	0	1.0	1.73	2.0	1.0	-1.0	-1.73	-2.0
$(\chi + 30)$	30	60	90	120	180	240	270	300
$y = 3 \sin (\chi + 30)$	1.5	2.6	3.0	2.6	0	-2.6	-3.0	-2.6

B1 For every 6 values

χ°	300	330	360	180	120
$y = 2 \sin \chi$	9.73	-1.0	0	0	1.73
$(\chi + 30)$	330	360	390	210	
$y = 3 \sin (\chi + 30)$	-1.5	0	1.5	-1.5	01.5

B1

B1



- (a) 360 both
- (b) (i) 2 and 3
- (c) $111^\circ \pm 1$ and $294^\circ \pm 1$ B1
- (d) $\begin{pmatrix} -30 \\ 0 \end{pmatrix}$ Translation of $\begin{pmatrix} -30 \\ 0 \end{pmatrix}$ followed by stretch s.f 1.5 B1
B1

Mathematics P2MS

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Cekenas Joint Mock

22. (a)

Class	5 - 9	10 - 19	20 - 39	40 - 49	B1	10 - 19 f = 24
Frequency	8	24	16	16	B1	20 - 39 f = 16
					B1	40 - 49 f = 16

(b)

χ	7	14.5	29.5	44.5			
f	8	24	16	16			
$f\chi$	56	348	472	712	$\Sigma f\chi = 1588$	B1	$\checkmark f\chi$

$$Mean = \frac{\Sigma f\chi}{\Sigma f} = \frac{1588}{64} = 24.8125$$

M1 \checkmark subst
A1

(c)

	5 - 9	10 - 19	20 - 39	40 - 49
f	8	24	16	16
cf	8	32	48	68

$$\frac{1}{4} \times 64 = 16$$

M1 \checkmark exp LQ

$$LQ = 9.5 + \frac{16 - 8}{24} \times 10$$

M1 \checkmark exp VQ

$$9.5 + \frac{1}{3} \times 10 = 12.83$$

$$UQ = 19.5 + \frac{48 - 32}{16} \times 20$$

39.5

Interquatile range M1
 $39.5 - 12.83$ A1
 $= 26.67$

23. (a) $C = Kn + \frac{h}{n}$ B1
- $$\left. \begin{aligned} 70 &= 6K + \frac{h}{6} \\ 50 &= 62K + \frac{h}{2} \\ 420 &= 36K + h \end{aligned} \right\}$$
- M1

$$\frac{-100 = 4K + h}{320 = 32K} \quad K = 10 \quad h = 60$$

A1

$$C = 10n + \frac{60}{n}$$

A1

(b) $C = 10 \times 12 + \frac{60}{12}$

B1

$$C = 120 + 5 = 125$$

A1

(c) $106 = 10n + \frac{60}{h}$

B1

$$106n = 10n^2 + 60 \Rightarrow 5n^2 - 53n + 30 = 2$$

$$\frac{53 \pm \sqrt{2809 - 4 \times 5 \times 30}}{2 \times 5} = \frac{53 \pm 47}{10} = \frac{100}{10} = 10$$

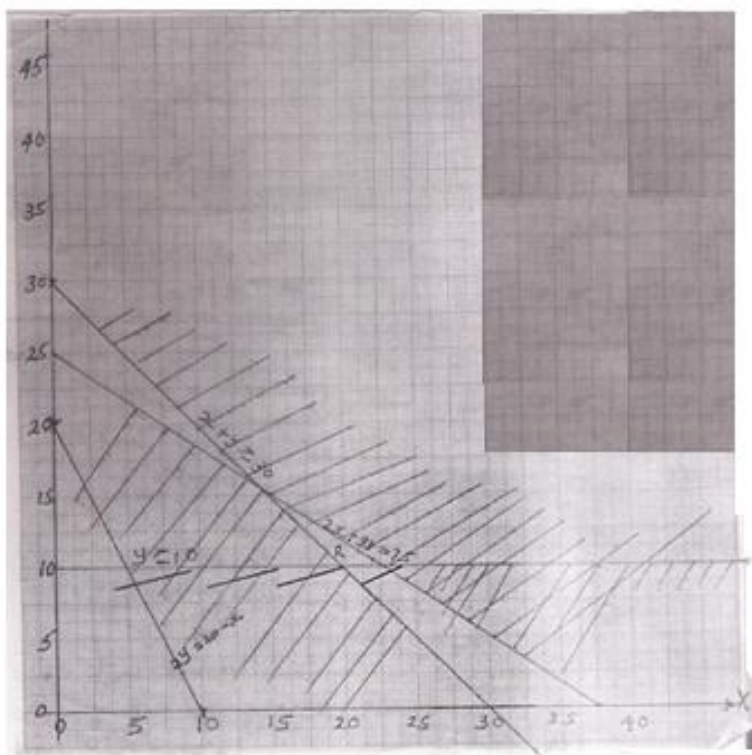
M1A1

Mathematics P2MS

7

Cekenas Joint Mock

24. (i) $x \geq 30 \checkmark^1$
 (ii) $2x + 3y \leq 75 \checkmark^1$
 (iii) $y \geq 10$



Each inequality
 Drawn B1
 B1
 B1
 $10x + 2y = C$
 Drawn or B1
 trial and error

$$y \geq 10$$

$$10x + 2y = C$$

$$C = 20$$

$$x = 21, y = 11$$

B1

(iv) $21 \times 10 + 11 \times 20 = 210 + 220 = 430$

M1

