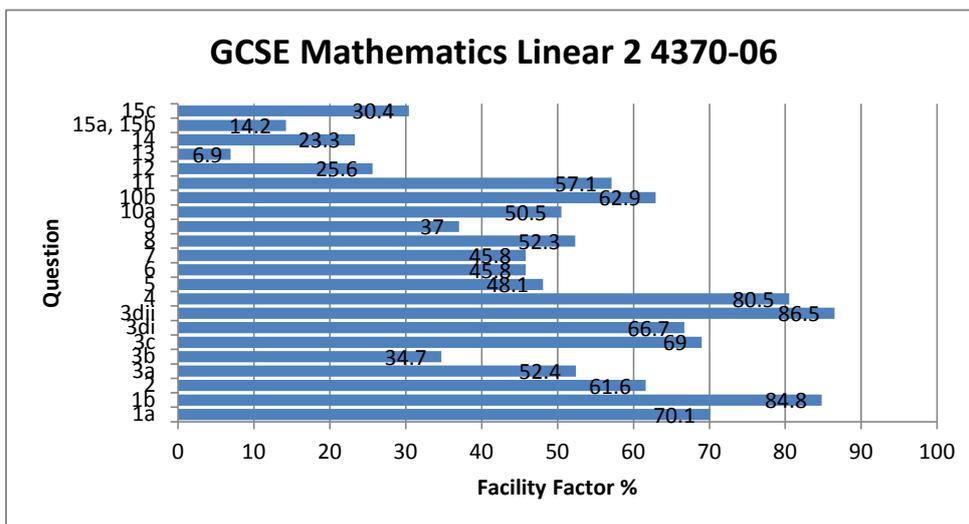


GCSE Mathematics Linear 2 4370-06

All Candidates' performance across questions

Question Title	N	Mean	SD	Max Mark	FF	Attempt %
1a	12082	1.4	0.9	2	70.1	99.4
1b	11942	2.5	0.8	3	84.8	98.2
2	11969	4.9	2.2	8	61.6	98.5
3a	11898	0.5	0.5	1	52.4	97.9
3b	9839	1.4	1.7	4	34.7	80.9
3c	11609	2.8	1.5	4	69	95.5
3di	12038	2.7	1.4	4	66.7	99
3dii	11955	2.6	0.9	3	86.5	98.3
4	11908	4	1	5	80.5	97.9
5	11808	2.9	2.2	6	48.1	97.1
6	11427	1.4	1.1	3	45.8	94
7	11448	1.8	1.4	4	45.8	94.2
8	12074	4.2	2.8	8	52.3	99.3
9	10727	1.5	1.8	4	37	88.2
10a	11095	1.5	1.3	3	50.5	91.3
10b	11990	1.9	1.1	3	62.9	98.6
11	11985	3.4	2.2	6	57.1	98.6
12	10335	1.8	2.2	7	25.6	85
13	10399	0.4	0.8	6	6.9	85.5
14	10479	1.6	2.3	7	23.3	86.2
15a, 15b	11104	0.6	1.1	4	14.2	91.3
15c	8891	1.5	1.8	5	30.4	73.1



3.

(b) The mean temperature in Moscow for a 12 month period is 4°C.
It is warmest in July, typically 26°C.
What would be the estimate for the mean temperature in Moscow if the temperature for July was not included? [4]

.....

.....

.....

.....

.....

.....



3.

- (b) The mean temperature in Moscow for a 12 month period is 4°C .
It is warmest in July, typically 26°C .
What would be the estimate for the mean temperature in Moscow if the temperature for July was not included? [4]

$$12 \times 4 = 48 \quad 26 = 22$$

$$22 \div 12 = 1.83^{\circ}\text{C}$$

3.

- (b) The mean temperature in Moscow for a 12 month period is 4°C .
It is warmest in July, typically 26°C .
What would be the estimate for the mean temperature in Moscow if the temperature for July was not included? [4]

$$12 \times 4 = 48 \quad 26 = 22$$

$$22 \div 12 = 1.83^{\circ}\text{C}$$

3.

- (b) The mean temperature in Moscow for a 12 month period is 4°C .
It is warmest in July, typically 26°C .
What would be the estimate for the mean temperature in Moscow if the temperature for July was not included? [4]

Mean Temperature = Total of all temperatures for 12 months and divide by 12 (number of months)

$$\square \div 12 = 4 \rightarrow 4 \times 12 = 48 \rightarrow \square \div 12 = 4$$

48 = Total of temperatures for all 12 months

$$48 - 26^{\circ}\text{C} \text{ (July's temperature)} = 22^{\circ}\text{C}$$

Mean Temperature = Total \div Number of months = $22^{\circ}\text{C} \div 12 = 1.8^{\circ}\text{C}$
without July

3.

- (b) The mean temperature in Moscow for a 12 month period is 4°C .
It is warmest in July, typically 26°C .
What would be the estimate for the mean temperature in Moscow if the temperature for July was not included? [4]

Mean Temperature = Total of all temperatures for 12 months and divide by 12 (number of months)

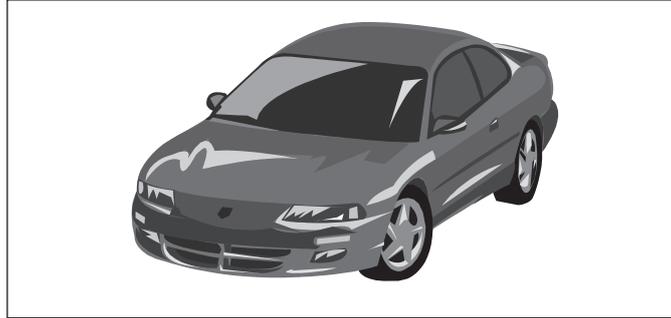
$$\square \div 12 = 4 \rightarrow 4 \times 12 = 48 \rightarrow \cancel{4} \div 12 = 4$$

48 = Total of temperatures for all 12 months

$$\square 48 - 26^{\circ}\text{C} \text{ (July's temperature)} = 22^{\circ}\text{C}$$

Mean Temperature = Total \div Number of months = $22^{\circ}\text{C} \div 12 = 1.8^{\circ}\text{C}$
without July

(d) Boris bought a car in Moscow for 251 850 Russian roubles.



(ii) The exchange rate for Russian roubles when Boris bought his car was
 $\text{£}1 = 50.37$ Russian roubles.

At the same time, Angharad bought a car in Wales.
Angharad paid $\text{£}5250$ for her car.

How much more than Boris did Angharad spend on buying her car?
Give your answer in pounds.

[3]

.....

.....

.....

.....

.....

.....

4370
060007



3. d

- (ii) The exchange rate for Russian roubles when Boris bought his car was $\text{£1} = 50.37$ Russian roubles. roubles

At the same time, Angharad bought a car in Wales.
Angharad paid $\text{£}5250$ for her car.

How much more than Boris did Angharad spend on buying her car?
Give your answer in pounds. [3]

$$\frac{1}{50.37} \times 5250 = 104.22 \quad \text{pounds}$$

$$50.37 \times 5250 = 264442.5$$

$$\text{Boris's car} = 251.850$$

$$\text{Angharad's car} = 264442.5$$

$$\text{So } 264442.5 - 251.850 = \underline{\underline{\text{£}12592.5}}$$

3. d

- (ii) The exchange rate for Russian roubles when Boris bought his car was $\text{£1} = 50.37$ Russian roubles. roubles

At the same time, Angharad bought a car in Wales.
Angharad paid $\text{£}5250$ for her car.

How much more than Boris did Angharad spend on buying her car?
Give your answer in pounds. [3]

$$\frac{1}{50.37} \times 5250 = 104.22 \quad \text{£}2013$$

$$50.37 \times 5250 = 264442.5$$

$$\text{Boris's car} = 251.850$$

$$\text{Angharad's car} = 264442.5$$

$$\text{So } 264442.5 - 251.850 = \underline{\underline{\text{£}12592.5}}$$

3. d

- (ii) The exchange rate for Russian roubles when Boris bought his car was $\text{£}1 = 50.37$ Russian roubles.

At the same time, Angharad bought a car in Wales.
Angharad paid $\text{£}5250$ for her car.

How much more than Boris did Angharad spend on buying her car?
Give your answer in pounds.

[3]

$$5250 \div 50.37 = 104.22$$

$$\text{Boris} = 251850 \div 50.37 = \text{£}5$$

$$\text{£}5250 - \text{£}5 = \underline{\underline{\text{£}5245}}$$

3. d

- (ii) The exchange rate for Russian roubles when Boris bought his car was $\pounds 1 = 50.37$ Russian roubles.

At the same time, Angharad bought a car in Wales.
Angharad paid $\pounds 5250$ for her car.

How much more than Boris did Angharad spend on buying her car?
Give your answer in pounds.

[3]

$$5250 = 50.37 = 104.22$$

$$\text{Boris} = 251850 \div 50.37 = \pounds 5$$

$$\pounds 5250 - \pounds 5 = \underline{\pounds 5245}$$

3. d

(ii) The exchange rate for Russian roubles when Boris bought his car was
£1 = 50.37 Russian roubles.

At the same time, Angharad bought a car in Wales.
Angharad paid £5250 for her car.

How much more than Boris did Angharad spend on buying her car?
Give your answer in pounds.

[3]

$$\frac{5250}{50.37} = 104.2287$$

$$251850 \div 50.37 = 5 = 75$$

$$5250 - 5 = 5245$$

Angharad paid £5245 more than
Boris

3. d

(ii) The exchange rate for Russian roubles when Boris bought his car was
£1 = 50.37 Russian roubles.

At the same time, Angharad bought a car in Wales.
Angharad paid £5250 for her car.

How much more than Boris did Angharad spend on buying her car?
Give your answer in pounds.

[3]

$$\frac{251850}{50.37} = 5000$$

$$251850 \div 50.37 = 5000$$

$$5250 - 5000 = 250$$

Angharad paid £250 more than
Boris

5.

You must show all your working.

[6]

Glaudiva gross income = £52,250

taxable = $52,250 - 9,205 = £43,045$

10% of £32,255 = £3,225.50

20% of 32,255 = $32,255 \times 2 = £6,451$.

Basic rate of tax on first £32,255 is £6,451.

Higher rate tax is 40% of £32,255 is double the 20% basic rate of £6,451

$6,451 \times 2 = £12,902$

Total tax is $£12,902 + 6,451 = £19,353$

$£43,045 - £19,353 = £23,692$ left
after tax and personal allowance
of £9,205.

5.

You must show all your working.

[6]

Gloria's gross income = £52,250

taxable = $52,250 - 9,205 = £43,045$

10% of £32,255 = £3,225.50

20% of 32,255 = $3,225.50 \times 2 = £6,451$.

Basic rate of tax on first £32,255 is £6,451.

Higher rate tax is 40% of £32,255 is double the 20% basic rate of £6,451

$6,451 \times 2 = £12,902$

Total tax is $£12,902 + 6,451 = £19,353$

$£43,045 - £19,353 = £23,692$ left
after tax and personal allowance
of £9,205.

5.

Calculate the total amount of tax that Claudia should pay
You must show all your working.

[8]

$$\begin{aligned}\text{Taxable income} &= \text{gross income} - \text{personal allowance} \\ &= 52\,250 - 9\,205 \\ &= \underline{43\,045} \text{ which is over } \underline{32\,255}\end{aligned}$$

Claudia must pay 40% -

$$10\% \text{ of } 43\,045 = 4\,304.50\text{p}$$

$$40\% \text{ of } 43\,045 = \underline{17\,218}$$

Claudia should pay 17 218 00p Tax.

Taxable income = 43 045 which is over 32 255.50
Needs to pay 40%

5.

Calculate the total amount of tax that Claudia should pay.
You must show all your working.

[8]

$$\begin{aligned}\text{Taxable income} &= \text{gross income} - \text{personal allowance} \\ &= 52\,250 - 9\,205 \\ &= \underline{43\,045} \text{ which is over } \underline{32\,255}\end{aligned}$$

Claudia must pay 40% -

$$10\% \text{ of } 43\,045 = 4\,304.50p$$

$$40\% \text{ of } 43\,045 = \underline{17\,218}$$

Claudia should pay 17 218 00p Tax.

Taxable income = 43045 which is over 32255.50
Needs to pay 40%



5.

Calculate the total amount of tax that Claudia should pay.
You must show all your working.

[8]

Claudia's gross income = £52 250.

Taxable income = gross income - personal allowance.

taxable income = 52 250 - 9 205 = £43 045

Basic tax rate on the first £32 255 = 20%

So 20% of 32 255 = 10% of 32 255 × 2

20% = £6 451

32 255 - 6 451 = £25 804

£43 045 - 32 255 = £10 790 left from the first tax rate.

However because she has £43 045 after personal allowance 40% must be taken as tax.

40% of 32 255 = £12 902

So Claudia should pay the higher rate tax £12 902.

12 902 + 6 451 = £19 353

5.

Calculate the total amount of tax that Claudia should pay.
You must show all your working.

[8]

Claudia's gross income = £52,250.

taxable income = gross income - personal allowance.

taxable income = 52,250 - 9,205 = £43,045

Basic tax rate on the first £32,255 = 20%

So 20% of 32,255 = 10% = 3,225.5 × 2

20% = £6,451

3,225.5 - 6,451 = £2,580.4

£43,045 - 32,255 = £10,790 left from the first tax rate.

However because she has £43,045 after personal allowance 40% must be taken as tax.

40% of 32,255 = £12,902

So Claudia should pay the higher rate tax £12,902.

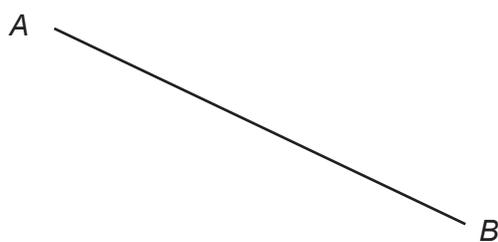
12,902 + 6,451 = £19,353



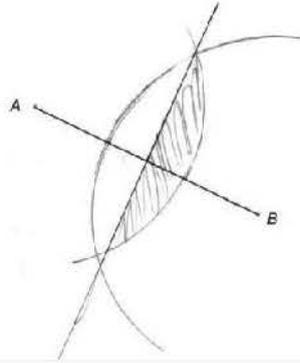
6. Shade the region that satisfies both of the following conditions.

- (i) The points are less than 4 cm from B .
- (ii) The points are nearer to B than to A .

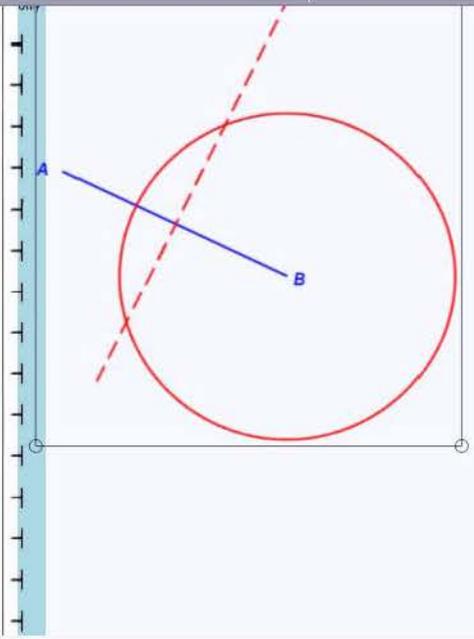
[3]



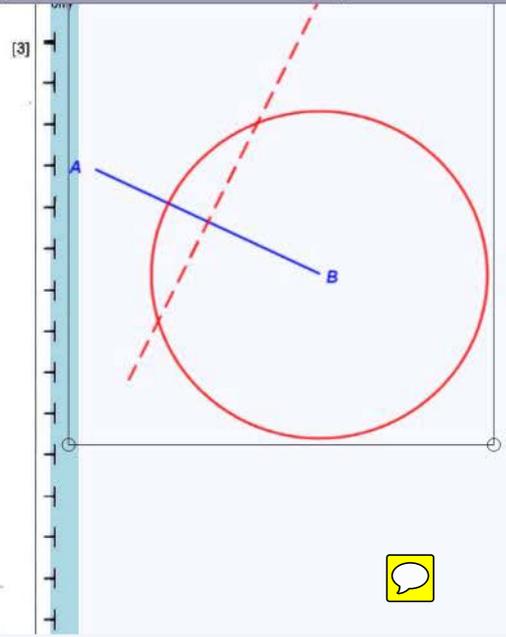
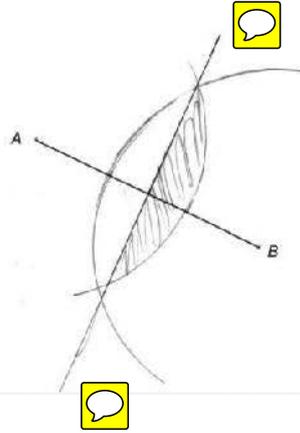
6. Shade the region that satisfies both of the following conditions.
- (i) The points are less than 4 cm from B .
 - (ii) The points are nearer to B than to A .



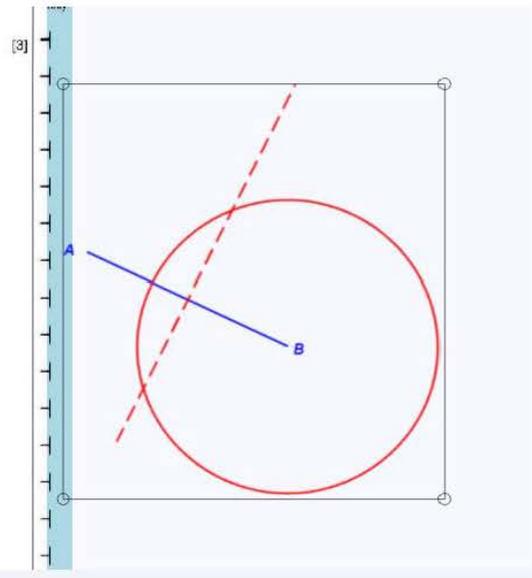
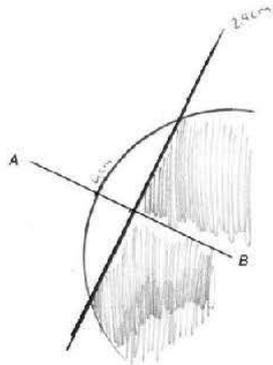
[3]



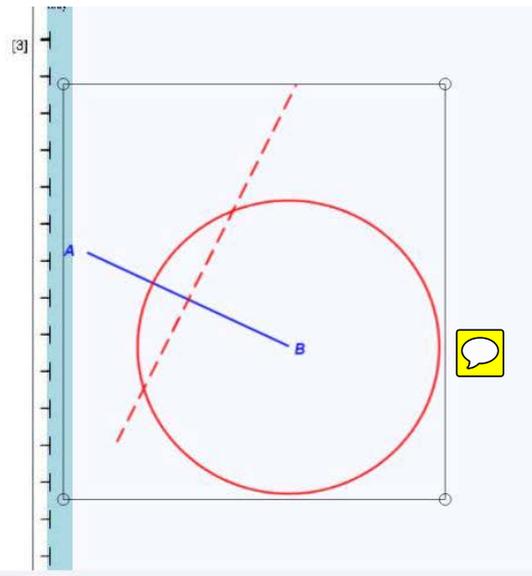
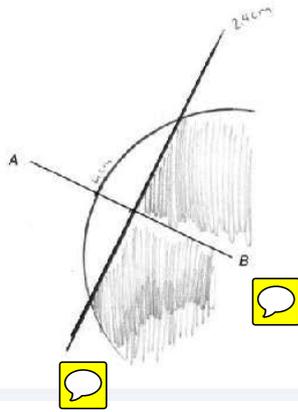
6. Shade the region that satisfies both of the following conditions.
- (i) The points are less than 4 cm from B .
 - (ii) The points are nearer to B than to A .



6. Shade the region that satisfies both of the following conditions.
- (i) The points are less than 4 cm from B .
 - (ii) The points are nearer to B than to A .



6. Shade the region that satisfies both of the following conditions.
- (i) The points are less than 4 cm from B .
 - (ii) The points are nearer to B than to A .



9. A ship leaves port A and sails for 6.2 miles on a bearing of 090° to a point B . It then turns and sails on a bearing of 224° until it reaches point C , which is due south of port A . Calculate the distance between the point C and port A . [4]

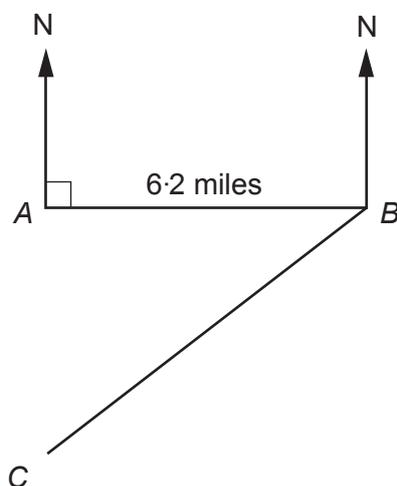


Diagram not drawn to scale

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



9.

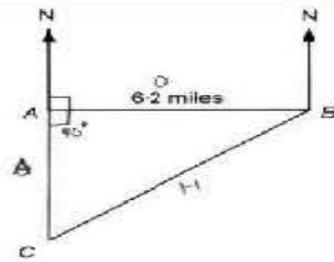


Diagram not drawn to scale

Soft Calc Ans

$$\frac{\Delta}{\tan} = 6.2 \quad \frac{6.2}{\tan 90}$$

$$\tan 90^\circ = \frac{6.2}{A}$$

$$A = \tan 90^\circ \times 6.2$$

$$\sin(90) \times 6.2 = x$$
$$AC = 6.2 \text{ miles}$$

9.

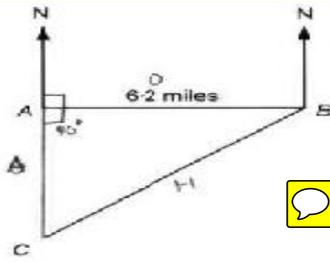


Diagram not drawn to scale

Soll cat.1 ~~then~~

$$\frac{\Delta}{\tan} = 6.2 \quad \frac{6.2}{\tan 90}$$

$$\tan 90^\circ = \frac{6.2}{A}$$

$$A = \tan 90^\circ \times 6.2$$

$$\sin(90) \times 6.2 = x$$
$$AC = 6.2 \text{ miles}$$



9.

Calculate the distance between the point C and port A.

[4]

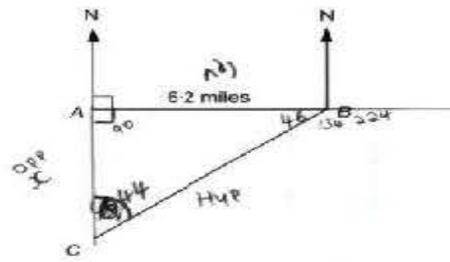


Diagram not drawn to scale

$$\text{Opp} = \frac{\text{Adj}}{\text{Hyp}}$$

$$\angle CAB = 90^\circ$$

$$\angle CBA = 46^\circ$$

$$\angle ACB = 44^\circ$$

9.

Calculate the distance between the point C and port A.

[4]

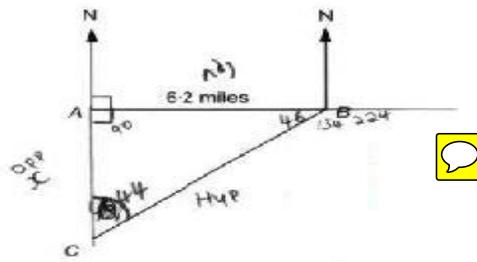


Diagram not drawn to scale

$$\text{Opp} = \frac{\text{Adj}}{\text{Hyp}}$$

$$\angle CAB = 90^\circ$$

$$\angle CBA = 46^\circ$$

$$\angle ACB = 44^\circ$$

