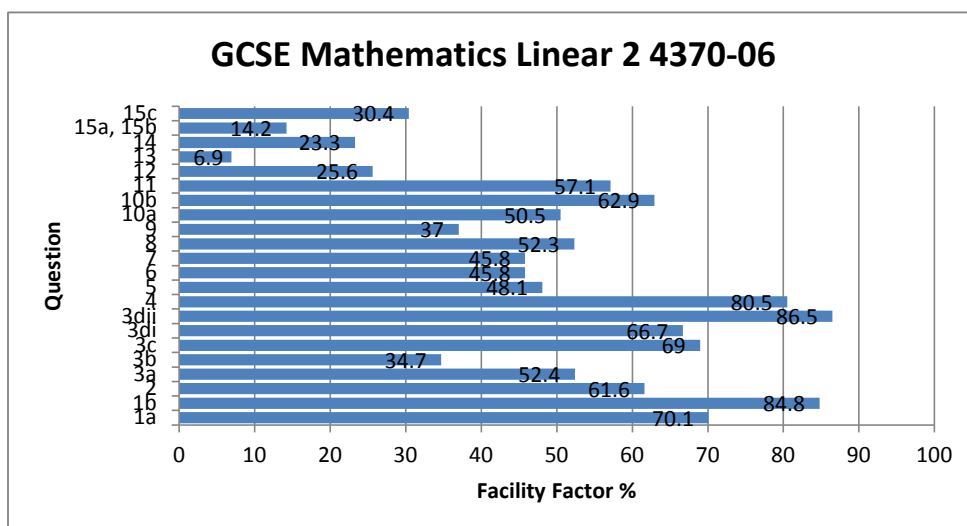


GCSE Mathematics Linear 2 4370-06

All Candidates' performance across questions

Question Title	N	Mean	S D	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]

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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

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

$$\text{Mean Temperature} = \text{Total} \div \text{Number of months} = 22^{\circ}\text{C} \div 12 = 1.8^{\circ}\text{C}$$

without July


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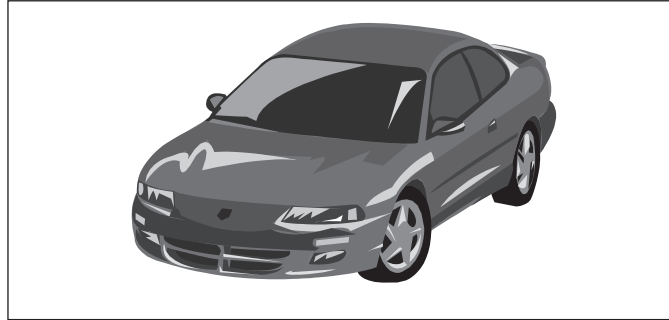
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- (d) Boris bought a car in Moscow for 251 850 Russian roubles.



- (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]

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3. d

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

$$50.37 \times 5250 = 264442.5$$

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

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

$$\text{So } 264442.5 - 251.850 = \pounds 12592.5$$

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Give your answer in pounds.

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$$5250 \div 50.37 = 104.22$$

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

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

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

$$251850 \div 50.37 = 5000$$

$$5250 - 5000 = 250$$

Angharad paid £250 more than
Boris

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Angharad paid £5250 for her car.

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

[3]

$$\begin{array}{r} \cancel{251850} + \cancel{50.37} \times \cancel{188} \\ = 104,228.7 \end{array}$$

$$251850 \div 50.37 = 5000 = 75$$

$$5250 - 5 = 5245$$

Angharad paid £5245 more than Boris

4370
060009



5.

You must show all your working.

[6]

Gloria's gross income = £52 250

$$\text{taxable} = 52250 - 9205 = \text{£}43045$$

$$10\% \text{ of } \text{£}32255 = \text{£}3225.50$$

$$20\% \text{ of } 32255 = 3225.50 \times 2 = \text{£}6451$$

Basic rate of tax on first £32255 is £6451.

Higher rate tax is 40% of £32255 is double the 20% basic rate of £6451

$$6451 \times 2 = \text{£}12,902$$

$$\text{Total tax is } \text{£}12,902 + 6451 = \text{£}19,353$$

$$\text{£}43045 - \text{£}19353 = \text{£}23692 \text{ left after tax and personal allowance of } \text{£}9205$$

5.

You must show all your working. [6]

Gaudia 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]

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

Claudia must pay 40% -

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

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

Claudia should pay £17 218.00 Tax.

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

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taxable income = gross income - personal allowance.

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

So 20% of 32 255 = 10% = 3 225.5 x 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

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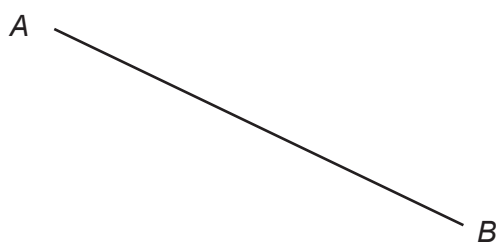
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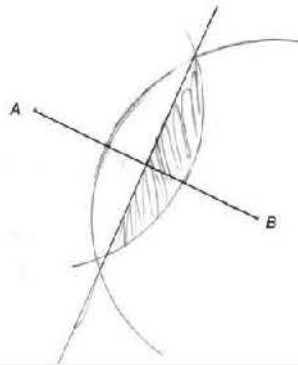
6. Shade the region that satisfies both of the following conditions.

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

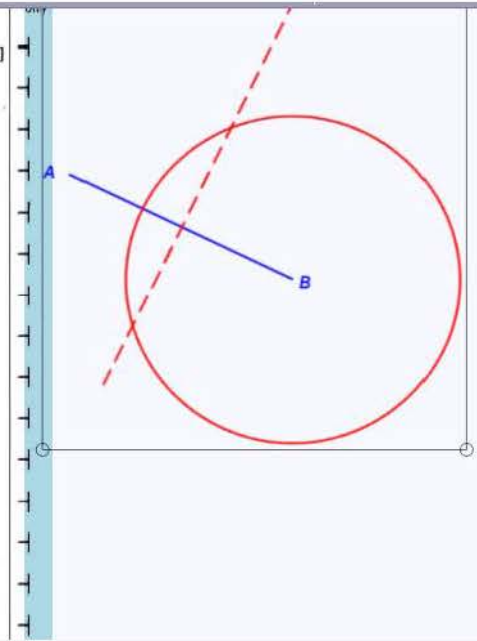
[3]



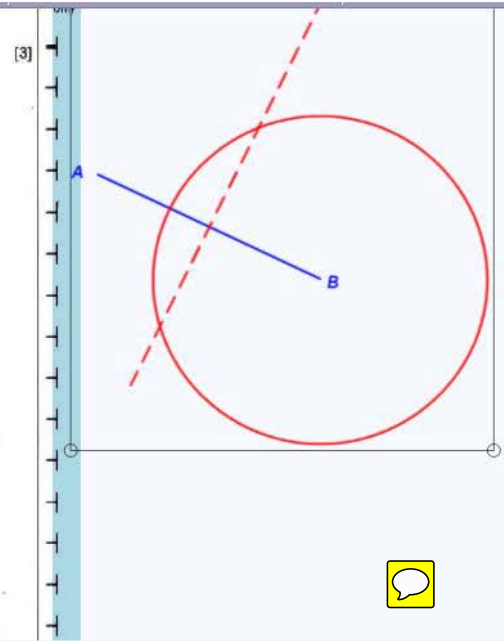
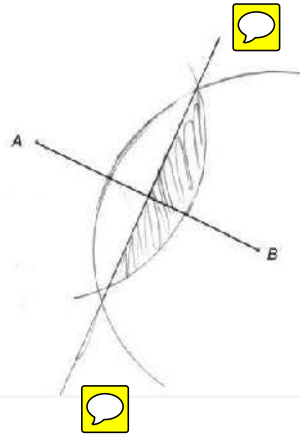
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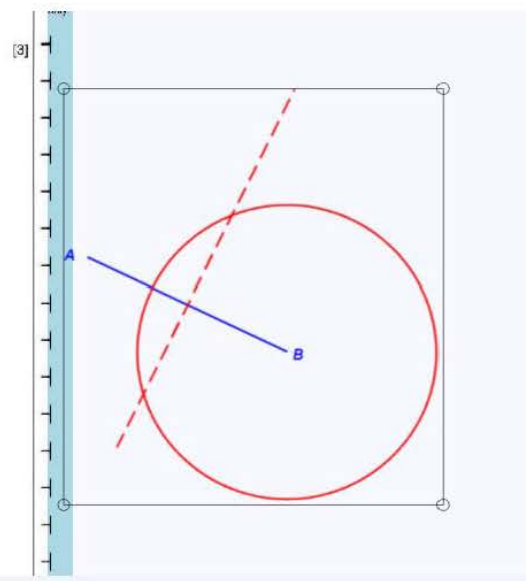
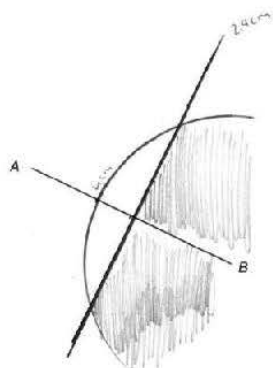
[3]



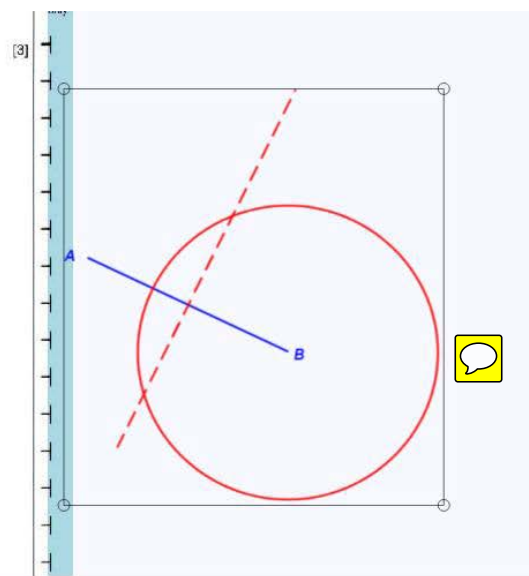
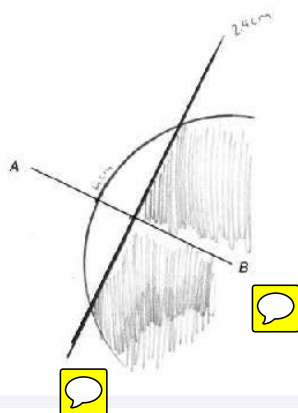
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9. A ship leaves port A and sails for 6.2 miles on a bearing of 090° to a point B . It then turns and sails on a bearing of 224° until it reaches point C , which is due south of port A . Calculate the distance between the point C and port A . [4]

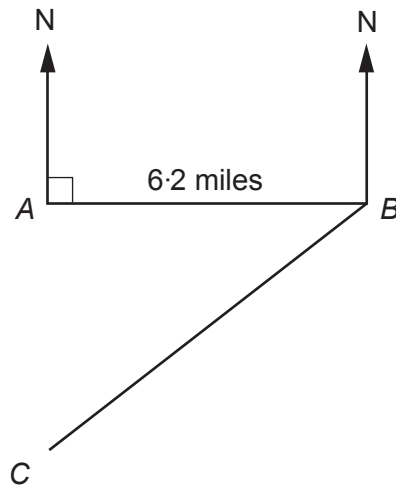


Diagram not drawn to scale

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9.

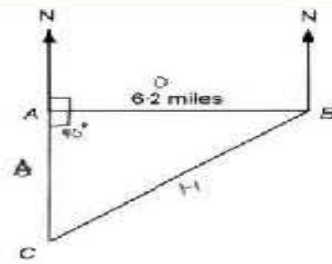


Diagram not drawn to scale

Soft Calc Answer



$$= 6.2$$

$$\frac{6.2}{\tan 20}$$

$$\tan 20^\circ = \frac{6.2}{A}$$

$$A = \frac{6.2}{\tan 20^\circ}$$

$$\sin(90) \times 6.2 = x$$

$$AC = 6.2 \text{ miles}$$

9.

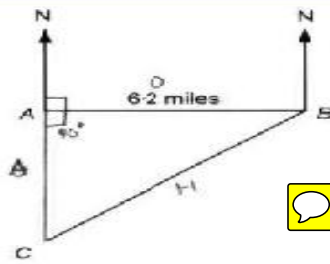


Diagram not drawn to scale

Sol: Cat. 1 Ans

$$\tan 20^\circ = \frac{6.2}{A} \quad \frac{6.2}{\tan 20^\circ}$$

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Calculate the distance between the point C and port A.

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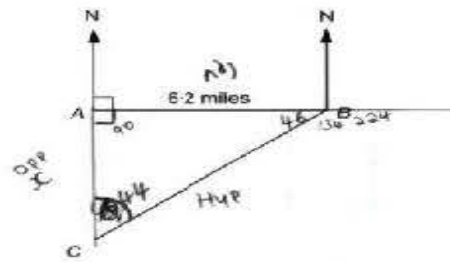


Diagram not drawn to scale

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

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

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

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

9.

Calculate the distance between the point C and port A.

[4]

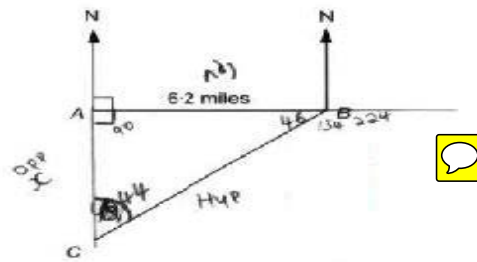


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