

You have one week to complete this. What you hand in should be your best work, and you must attempt every question.

If you are stuck then please either consult notes or textbooks, attend a workshop, or ask your teacher.

You may need to refer to the formula book, found [here](#):



or financial information, found [here](#):



- 1) On holiday, Phil buys four jars of olives.
He pays a total of 6 euros.
- At home, the same size jar of olives costs £2.50
£1 = 1.31 euros
- Phil says,
"Buying the four jars of olives on holiday has saved me more than £5"
- Is Phil correct?
You **must** show your working.

[4 marks]

- 2) Sally is a primary school teacher.
She records the heights, in centimetres, of the 16 children in her class.
Her results are shown below.

108	121	136	105	116	106	123	134
115	117	128	107	115	119	125	133

- (a) Draw an ordered stem-and-leaf diagram to show the data.
The key is given for you.

[3 marks]

- (b) Work out the median height of the children. [2 marks]

- (c) Sally claims that one quarter of the class are over 130 cm tall.

Is Sally correct?

Explain your answer.

[2 marks]

- 3) The table shows the index numbers and weights for five different items of household expenditure in 2003, 2007 and 2009.

Item	Index Number			Weight
	2003	2007	2009	
Food	100	104	106	0.2
Heat and Light	100	105	108	0.2
Clothing	100	100	97	0.15
Mortgage	100	106	106	0.4
Other	100	105	109	0.05

- (a) The base year is 2003.
How do you know this from the figures in the table?
- (b) What happened to household expenditure on mortgages from 2007 to 2009?
- (c) Which is the only item to show a reduction in expenditure from 2003 to 2009?
- (e) (i) Heat and Light expenditure for a typical household in 2007 was £630.
How much would this have been in 2009?
- (e) (ii) Find the actual increase in Heat and Light expenditure from 2003 to 2009.

- 4) Craig had an income of £122 000

- (a) Calculate Craig's taxable income

[2 marks]

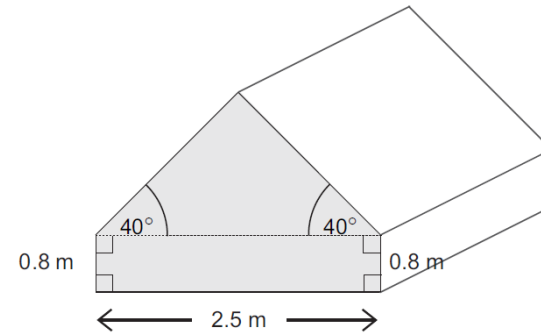
- (b) Calculate the income tax paid by Craig

[5 marks]

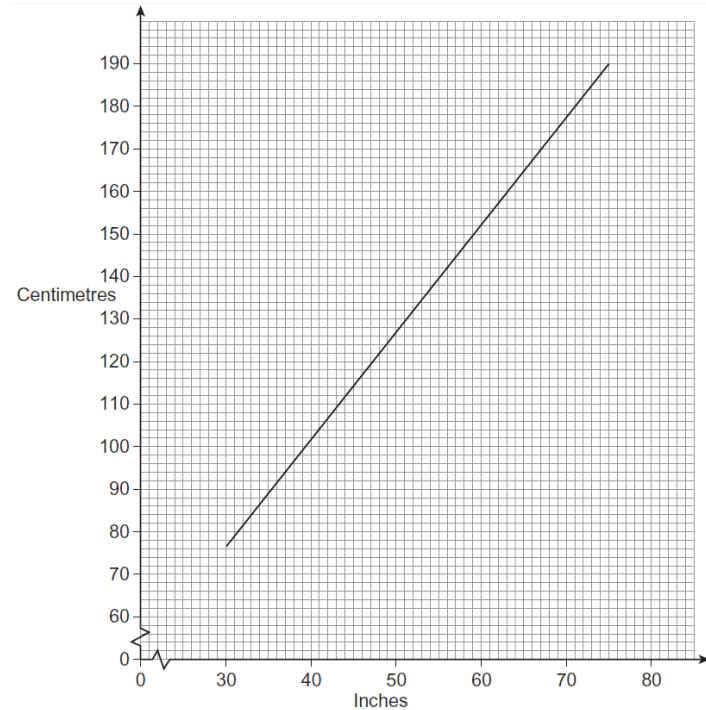
Homework 11

7)

A tent is in the shape of a prism.
The cross section is shaded.



This graph can be used to convert between centimetres and inches.



There are 12 inches in 1 foot.
Tom is 5 feet 8 inches tall.

Can Tom stand up straight in the tent?
You **must** show your working.

[5 marks]

5)

Sarah works as a receptionist at a doctor's surgery.
Each day she records the number of missed appointments.
The table shows the number of missed appointments for a 90-day period.

Number of missed appointments (x)	0	1	2	3	4	5	6	7	8
Number of days (f)	5	7	21	18	15	7	6	7	4

- (a) Write down
- (a) (i) the mode
- (a) (ii) the range of the number of missed appointments.
- (b) (i) Calculate the mean number of missed appointments.
- (b) (ii) Calculate the standard deviation of the number of missed appointments.
- (c) Is the mean a suitable measure of average in this case?
Give a reason for your answer.
- (d) Later Sarah finds that she has made some mistakes.
All 5 of the days with 'no appointments missed' should have been recorded as 'four appointments missed'.
She corrects the mistakes.
Tick a box to show what happens to the following measures after the corrections have been made.

- 6) (a) Estimate how many days the average person in the UK, born after the year 2000, will spend looking at a smart phone in their lifetime.
You must state all your assumptions
- (b) How might changing one of your assumptions affect your final answer?

Key 12 | 3 represents 123 cm

_____	_____
_____	_____
_____	_____
_____	_____

	Increases	Stays the same	Decreases
Mode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>