GCSE Numeracy

Calculator Allowed

Intermediate Tier

Progress Check #2

90 Minutes

Student Name:						

Question	Topic	Grade	Maximum Mark	Mark Awarded
1	% in context	E	3	
2	% Discount	Е	7	
3	Conversion Graph	D	4	
4	Unit Costs	D	6	
5	Exchange Rates	D	10	
6	Mean of Grouped Data	D	3	
7	Income Tax	С	6	
8a	Grouped Frequency Diagram	D	3	
8b	Estimating Mean	С	4	
8c	Median group	С	1	
9	Angles Parallel Lines	С	2	
10	Percentage Change	С	4	
11	Percentage Change	С	3	
12	Cumulative Frequency	В	5	
13	Box & Whisker Diagrams	В	6	
14	Reverse Percentages	В	6	
15	Upper & Lower Bounds in Measurement	В	7	



1. Daniel wants to buy a new bicycle. It is priced at £480.



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D)an	ıel	can	eitt	٦er

- pay £480 immediately, or pay a 15% deposit, followed by 24 monthly payments of £22.

(a)	Calculate the total amount Daniel would pay using the deposit and monthly payments method. You must show all your working.	
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You will be assessed on the quality of your written communication in this question.

Arwyn needs four new tyres fitted on his car and would also like a new spare tyre. He sees two deals advertised at the garage.

"Economy Tyres" £64 each

No matter how many tyres fitted, total fitting charge £20 "Top Class Tyres" Made to last longer! £95 each

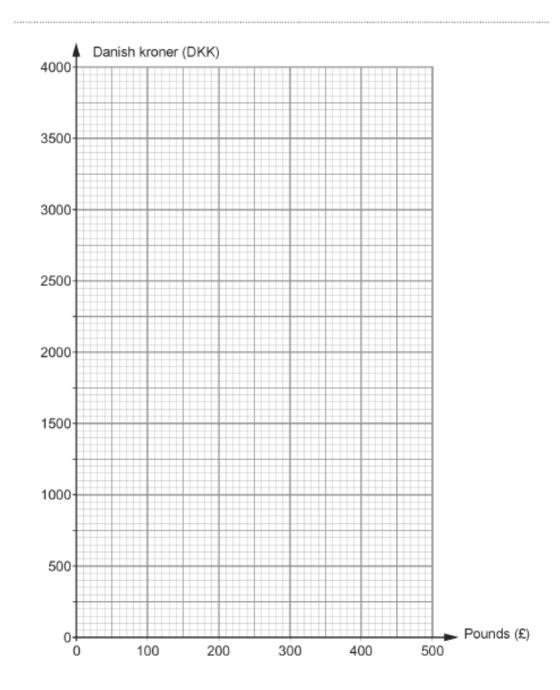
10% discount if you buy 4 or more tyres

Free fitting

Arwyn has exactly enough money to buy four 'Top Class Tyres' and to have them fitted. Does he have enough money to buy, and have fitted, four 'Economy Tyres' with a fifth tyre as a spare?								
You must show all your working. [7]								

- Graham and Lisa go on holiday to Copenhagen, Denmark.
 - (a) They need to change currency between pounds (£) and the Danish kroner (DKK). They both go into the same currency shop. Graham changes £200 and receives 1800DKK. Lisa changes £300 and receives 2700DKK.

(1)	(DKK).	conversion	graph that	can be us	ed to change	pounds (£) to	Danish krone [2]



	equivalent to £700.	
	Complete the following sentence:	
	£700 is approximately Danish kroner (DKK)	[2]
4.	In Tesco, potatoes are priced as £1.80 per kg.	
	Sirloin steak is priced as £16.75 per kg.	
	After buying a 2.5 kg bag of potatoes and a sirloin steak I receive £8.80 change for a £20 note.	
	What was the mass of my steak?	[6]
		•••••
		••••••
		•••••

(ii) Explain how the graph can be used to find how many Danish kroner (DKK) are

The	dirham is the unit of currency in the United Arab Emirates.
	Exchange bureau
	Going on holiday? £1 buys 5.48 dirham Selling back your dirham? £1 for 5.52 dirham
(i)	Lois goes on holiday to Dubai, in the United Arab Emirates. She takes £350 in cash to buy United Arab Emirates dirham.
	On the day she exchanges her money, the bureau has only 5, 10, 20, 50 and 100 dirham notes.
	Lois does not intend to spend more than £350, but she wants to buy as many dirham notes as she can with her cash.
	How much will Lois have left from her £350 after buying the dirham? Give your answer to the nearest penny. [6]
Parison.	
11-11-1-1-1-	
(ii)	Kenny exchanged £1000 for dirham. He then cancelled his holiday and exchanged all his dirham back to pounds. How much money did Kenny lose? [4]

5.

6.

Pedro has kept a record of the total number of goals he scored in each of the twenty seasons that he played professional football.

The table below shows this information.

Goals scored	Number of seasons
4	3
6	8
7	2
11	6
22	1

(a)	Calculate the n	nean number of goa	ils scored by Pedro	per season.	
					[3]

Loretta is paid in euros.
 She is checking her tax bill for last year.

The tax rates last year were as follows:

- No tax on the first €3500 of earnings
- Earnings in excess of €3500 and up to €10 500: taxed at a rate of 25%
- Earnings above €10 500: taxed at a rate of 35%

Last year Loretta's gross earnings were €40000. How much tax did she pay in total?

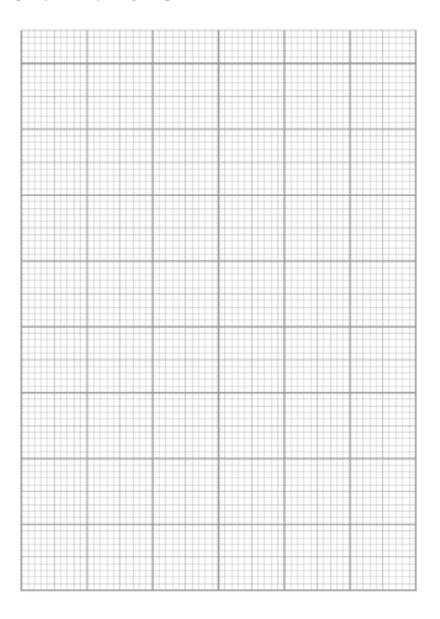
[6]

 A survey of 240 primary school pupils was carried out to find the amount of time they spent each week doing their homework.
 Here are the results of the survey.

Time taken, t, in hours	Number of pupils
0 < t ≤ 1	80
1 < t ≤ 2	60
2 < t ≤ 3	52
3 < t ≤ 4	32
4 < t ≤ 5	16

[3]

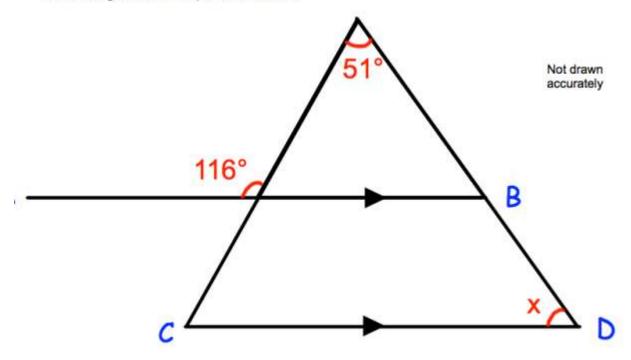
(a) Draw a grouped frequency diagram of the data.



(b)	Calculate an homework.	estimate	of the	mean	time	that	pupils	spent	each	week	doing	their [4]

(C) Write down	the class i	nterval	that co	ntains	the r	median					[1]

In the diagram, AB is parallel to CD.



Work out the size of angle x.

You must show your workings.

[2]

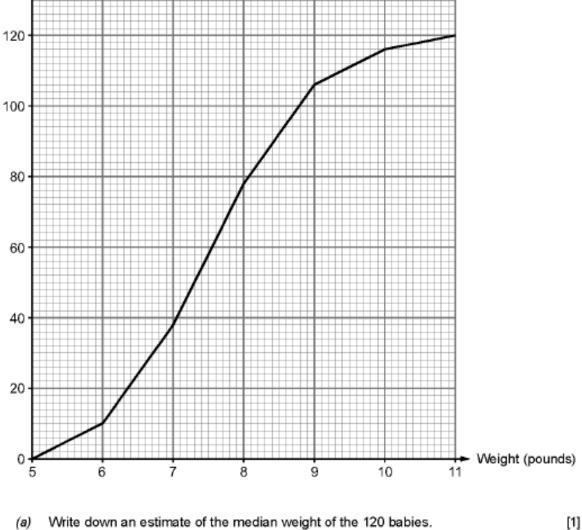
'If you inc get back t	rease a posit to your origin	tive number b al number.'	y 10% and the	n decrease th	at new value b	y 10'
,	,					

	***************************************		***************************************			

				h their salary w 2% increase or		
Each wor	ker can receiv	e either a £500) increase or a			
Each wor	ker can receiv	ve either a £500 salary of £240) increase or a 00 per year.	2% increase or	their presents	sala
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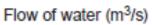
10.

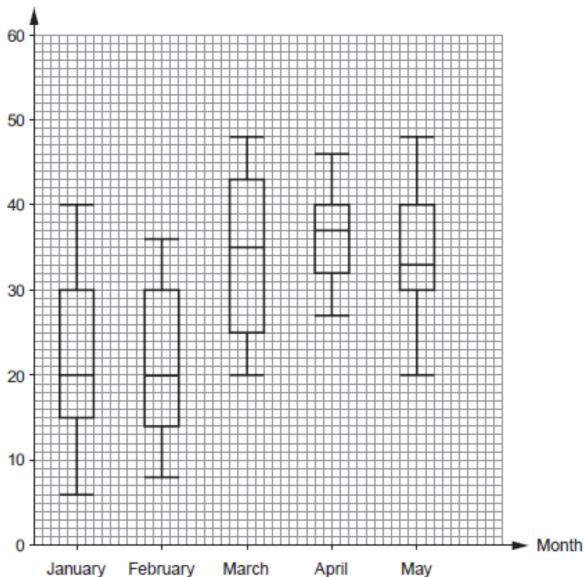




- (a) Write down an estimate of the median weight of the 120 babies.
- (b) Calculate an estimate of the interquartile range of the weights of the 120 babies. [2]
- (c) Write down an estimate of the number of babies whose weights were greater than 9 pounds. [2]

The following box and whisker plots show the flow of water through a drain, measured in m³/s. The flow of water was measured at 11 a.m. each day for the first 5 months of the year.





(a)	in which o	of the five h	nonths was th	e median flow o	of water the grea	itest?	[1]

(b)	In which of the five months was the range of the flow of water the greatest?					
(c)		is writing some statements for a report on the flow o plete each of the statements given below. 'Both the upper quartiles and medians in the mor			[1]	
					Lil	
	(ii)	'25% of the results in March show the flow of w	ater was gred	iter than	[1]	
(d) Circle either TRUE or FALSE for each of the following statements.						
	of the 6 m ³ /s	results in January show the flow of water was less	TRUE	FALSE		
The units, m³/s, measure the volume of water passing through the drain each second. TRUE FALSE				FALSE		
The mean flow of water in April was certainly greater than 36 m ³ /s.				FALSE		
The month with the greatest difference between the lower quartile and the median was May.			TRUE	FALSE		

	A shop has reduced the price of a bicycle by 40% of its original price.					
,	The sale price of the bicycle is £192.					
	Calculate the original price of the bicycle.					
,						
,		***********				
		[3]				
	The hill for repairing a washing machine came to £151.68, inclusive of VAT at 20%					
	The bill for repairing a washing machine came to £151.68, inclusive of VAT at 20%. What was the cost before VAT was added?	[3]				
	What was the cost before VAT was added?					
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Stylish computer desk

Made of laminate wood.

Length is exactly 2000mm

Non-scratch top.



Luc wants this new desk for his bedroom.

The desk is to fit on the straight wall between his wardrobe and his bookcase.

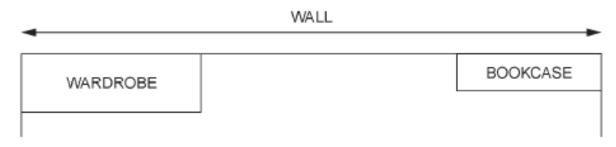


Diagram not drawn to scale

Luc has measured the length of

- the wall, which is 600 cm, correct to the nearest 10 cm,
- the bookcase, which is 147 cm, correct to the nearest 1 cm,
- the wardrobe, which is 250 cm, correct to the nearest 1 cm.
- (a) What is the greatest possible length of the wall?
 Circle your answer.

600 cm 605 cm 645 cm 610 cm 650 cm

(b) What is the least possible length of the wardrobe? Circle your answer.

249cm 249·45cm 249·49cm 249·5cm 250cm

[1]

[1]

You must show all your calculations, give the greatest or least bounds of any measurements used in calculations of comparisons, give a reason for your answer. [5]	

(c) Can Luc be certain that this desk will fit in the space available?