

Practice Exam 3**NON- CALCULATOR**

1. Dave and Elaine each have the same monthly data allowance on their mobile phone contract.

Dave has used $\frac{4}{7}$ of his monthly data allowance.

Elaine has used $\frac{5}{8}$ of her monthly data allowance.

Who has used the most data?

Give a reason for your answer

3 marks

2. The table below shows the average monthly exchange rates for British pounds (GBP) to euros (EUR) between January and July 2012.

Average Monthly Rates (1 GBP to EUR)	
January	1.2018 EUR
February	1.1949 EUR
March	1.1984 EUR
April	1.2166 EUR
May	1.2435 EUR
June	1.2410 EUR
July	1.2637 EUR

Using the information above, how many more euros would I have received if I changed £500 when the exchange rate was at its highest compared to its lowest?

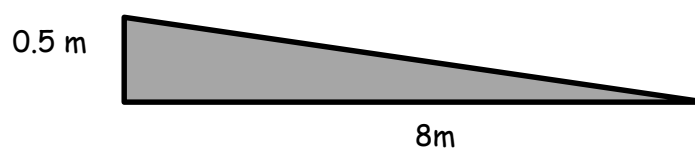
Show all working.

3 marks

3. The "accessibility guidelines for buildings and faculties for wheelchair access" give two recommendations.

- The maximum gradient of a ramp shall be 0.083.
- The maximum rise shall be 760mm for any length of run.

The drawing below shows the design for a **new ramp**.



Does the new ramp meet the recommendations? **Give a reason.**

2 marks

CALCULATOR

4. The travelling expenses claimed by salesperson depend on the engine capacity of the car and the number of miles travelled per week as shown in the table below.

ENGINE CAPACITY	EXPENSES PER MILE
Less than or equal to 1 litre	£0.25 for each of the first 250 miles
Greater than 1 litre but less than or equal to 1.2 litres	£0.27 for each of the first 250 miles
Greater than 1.2 litres	£0.29 for each of the first 250 miles
Where the number of miles travelled in a week is greater than 250, £0.15 can be claimed for each additional mile.	

Find the expenses claimed by a salesperson in a week when 550 miles are travelled and the engine capacity is 1.6 Litres.

4 marks

5. A copy of Logan Pollock's payslip is shown below for one week in February.

Name L. Pollock	Employee No. 027	Tax Code 64L	Week Ending 14/02/2012
Basic Pay £296.00	Overtime Pay £55.50	Bonus —	Gross Pay £351.50
National Insurance £20.04	Income Tax £45.40	Pension £21.09	Deductions £86.53
			Net Pay £264.97

Logan worked 40 hours for his basic pay.

If overtime is paid at the rate of "time and a half", calculate how many hours of overtime he worked during that week.

3 marks

6. One weekend, the attendances at five Premier League football matches were recorded.

8 900 12 700 59 200 10 300 9 700

The median attendance is 10 300.

(a) Calculate the mean attendance.

1 mark

(b) Which of the two averages is more representative of the data?

You must explain your answer.

1 mark

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7. A superstore has three kinds of paint.

(a) Using the information shown, explain why Coverite appears to give the best value for money.



3 marks

(b) On the backs of the tins is more information. Using this additional information, decide which paint is the best value for money.

You must show all your working.



3 marks

8. In January, Tony weighed himself. The scales read 95kg.

He is going on holiday on the 6th July. He wants to hit a target weight of 73 Kg by then.

On the 1st February, he hired Calum as his personal trainer. Calum reckoned his programme of exercise and diet would see Tony reduce his weight by 6% each month.

If Calum's programme is successful, will Tony reach his target weight before the date of his holiday?

Use your working to justify your answer.

3 marks

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Non - Calculator

	Marking Scheme	Evidence
1.	<p>ANS :Elaine has more data</p> <ul style="list-style-type: none"> • Know how to calculate fraction • Know how to calculate fraction • Conclusion with comparison 	<ul style="list-style-type: none"> • 0.57 or 0.62 • 0.57 or 0.62 • Elaine as $0.62 > 0.57$
2.	<p>ANS :34.40 euros</p> <ul style="list-style-type: none"> • Calculate euros at lowest • Calculate euros at highest • Comparison 	<ul style="list-style-type: none"> • $500 \times 1.1949 = 597.45$ • $500 \times 1.2637 = 631.85$ • $631.85 - 597.45$
3.	<p>ANS: Yes, $0.0625 < 0.083$</p> <ul style="list-style-type: none"> • Calculate gradient • statement 	<ul style="list-style-type: none"> • $0.5 / 8 = 0.0625$ • Yes as $0.0625 < 0.083$

Calculator

Question	Marking Scheme	Evidence
4.	<p>ANS: £117.50</p> <ul style="list-style-type: none"> • Evaluate table • Know to calculate cost of miles • Know to calculate cost of additional miles • Calculate total expenses 	<ul style="list-style-type: none"> • 0.29 • $0.29 \times 250 (= 72.50)$ • $0.15 \times 300 (=45)$ • $72.50 + 45 = 117.50$
5.	<p>ANS :5 hours</p> <ul style="list-style-type: none"> • Know how to calculate basic rate • Know to calculate overtime rate • Calculate hours of overtime 	<ul style="list-style-type: none"> • $296/40 = 7.40$ • $7.40 \times 1.5 = 11.10$ • $55.50/11.1 = 5$
6.(a)	<p>ANS :20160</p> <ul style="list-style-type: none"> • Know how to calculate mean 	<ul style="list-style-type: none"> • $(8900+ 12700+ 59200+ 10300+ 9700)/5 = 20160$
(b)	<p>ANS : Median with explanation</p> <ul style="list-style-type: none"> • Decision 	<ul style="list-style-type: none"> • Median because it is closer to the majority of the values or because 59200 makes the mean higher.
7. (a)	<p>ANS :It is cheapest per Litre</p> <ul style="list-style-type: none"> • Know to calculate cost per litre • Calculate cost per L of other 2 • Comparison with justification 	<ul style="list-style-type: none"> • 1.995, 1.66 or 1.62 • Other 2 values • Coverlite is the

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		cheapest per Litre
(b)	<p>ANS : Tuffcote is cheapest per m^2</p> <ul style="list-style-type: none"> • Know to calculate cost per m^2 • Calculate other values • Conclusion with justification 	<ul style="list-style-type: none"> • 0.12468, 0.118 or 0.12461 • Other 2 values • Tuffcote is the cheapest per m^2 so best value.
8.	<p>ANS: No, $77.5\text{kg} > 73\text{kg}$</p> <ul style="list-style-type: none"> • Know to decrease by 6% • Calculate weight after decrease • Conclusion with justification 	<ul style="list-style-type: none"> • 0.94 • $95 \times (0.94)^5 = 77.5$ • No as he will be over his target weight, $77.5 > 73$