Name:	Teacher Assessment

Section A   Non-Calculator Percentage Problems   Grade D → A

1.   Which is larger, $\dfrac{7}{8}$ or 78% ? Give a reason for your answer.

Answer ……………………………………………………………

Reason …………………………………………………………………………….

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(Total 2 marks)

2.   Write the following in order, starting with the smallest.

   0.22 $\dfrac{3}{20}$ 19%   You **must** show your working.

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Answer .... , ... , ...

(Total 3 marks)

3.   Beth has 400 roses. 48 are yellow.

What percentage of the roses are yellow?

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Answer .... %

(Total 2 marks)

4.   What percentage is £108 of £150?

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Answer .... %

(Total 2 marks)

5.   50 people were asked how they travel to work.
Some of the results are shown in the table.

Method of travel	Number of people
Car	23
Train	
Bicycle	8
Walk	5

Calculate the percentage of these people who travelled by train.

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Answer ....%

(Total 3 marks)

6.   (a)   Miss Evans earns £240 per week. She is awarded a pay rise of 3.5%.

Mr Dale earns £220 per week. He is awarded a pay rise of 4%.

Whose weekly pay increases by the greater amount of money?
You **must** show all your working.

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Answer ....

(Total 4 marks)

7. James invests £700 for 2 years at 10% per year compound interest.
How much interest does he earn?

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Answer £ ....

(Total 2 marks)

8. A special packet of breakfast cereal contains 20% more than a normal packet. The special packet contains 600 g of cereal. How much cereal does the normal packet contain?

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Answer .... g

(Total 3 marks)

9. A shop reduces the price of its dresses by 30%.
As a result it sells 60% more dresses than last month.

Calculate the percentage increase in its takings.

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Answer .... %

(Total 4 marks)

10. An internet auction site has two identical cars for sale.
Both cars are priced at £10 000.
The price of each car is to be reduced each week until they are sold.
The first car is reduced by 10% each week.
The second car is reduced by £800 each week.
Assuming that no-one buys the cars, after how many weeks will the second car be cheaper than the first?

You **must** show all your working.

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Answer...

(Total 4 marks)

11.

Sale!

12% off

Garden Seat

Save £15

What is the normal price of the garden seat?

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Answer £ ……………………………………………………………

(Total 3 marks)

12. A shopkeeper normally sells his goods at 70% above cost price.

In a sale he reduces his prices by 40%.

What percentage profit does the shopkeeper make on goods sold in the sale?

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Answer .... %

(Total 3 marks)

13. The number of people waiting for an island ferry is 25% over the legal safety limit.

What percentage of the people waiting must the ferry leave behind so that it departs with the maximum number of passengers allowed?

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Answer .... %

(Total 3 marks)

14. Carol sells strawberries.
In 2002 she reduced the weight of strawberries in each packet by 20%.
After receiving complaints, she increased the weight in 2003 back to the amount each packet contained in 2001.

What percentage increase did Carol use? Give your answer as a percentage of the contents in a packet in 2002.

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Answer .... %

(Total 3 marks)

15. Liz estimated the cost of the material needed to make herself a dress.

When Liz goes to a shop to buy the material, the cost per metre is 40% more than she had estimated.

Liz is informed by the shopkeeper that she had miscalculated the amount of material and she really needs 20% more material than she had estimated.

How much more than her original estimate does the dress material cost?

Give your answer as a percentage of Liz's original estimate.

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Answer .... %

(Total 3 marks)

Success:	Target:
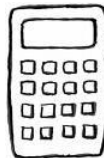
Section B   Calculator Percentage Problems   Grade D → A

1.   People in the country of Brownland have to pay income tax on the money they earn as shown.

Earnings (£)	Tax to pay
0 – 5000	NIL
Over 5000	20 % on all earnings over £5000

Examples	
Earnings (£)	Tax to pay
4000	NIL
13 000	20 % of £8000

Lynn earns £28 000. Work out the amount of tax that Lynn pays.

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Answer £ …………………………………………………

(Total 3 marks)

2.   Two bottles are on a shelf.
The 3 litre bottle, *A*, is 55% full of water.
The 2.5 litre bottle, *B*, is three-quarters full of water.
Which bottle contains more water?
You **must** show all your working.

Not to scale

A   *B*

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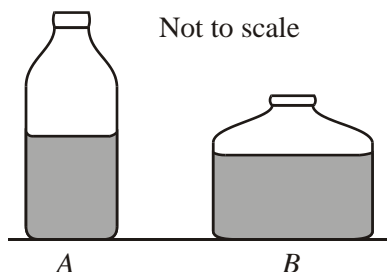
Answer ....

(Total 4 marks)

3. A shop has a special offer.

> ## SPECIAL OFFER
> *This Week Only*
>
> **BUY THREE ITEMS
> AND
> GET THE CHEAPEST ONE FREE**

(a) Ian buys the following items:

A bottle of shampoo priced at	£1.75
A bar of soap priced at	£1.15
An aftershave spray priced at	£2.85

What is Ian's percentage saving using this special offer?

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Answer .... %

(3)

(b) The greatest possible percentage saving is when the three items are all the same price.

Calculate this percentage saving.

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Answer .... %

(2)(Total 5 marks)

4. (a) Mrs Brown's bill for servicing her car is £96 plus VAT. VAT is charged at 17.5%.

What is her total bill?

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Answer £ ....

(3)

(b) Mr Smith's bill for servicing his car is £185.65 including VAT at 17.5%.

How much was his bill before VAT was added?

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Answer £ ....

(3)
(Total 6 marks)

5. (a) Miss Evans earns £240 per week. She is awarded a pay rise of 3.5%.

Mr Dale earns £220 per week. He is awarded a pay rise of 4%.

Whose weekly pay increases by the greater amount of money?
You **must** show all your working.

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Answer ....

(4)

(b) In 2003 the State Pension was increased by 2% to £78.03.
What was the State Pension before this increase?

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Answer £ ....

(3)
(Total 7 marks)

6. On a day in November 45% of the pupils at a school have flu.
Of the pupils who have flu, 80% are absent from school.
6% of the pupils who do not have flu are absent from school for other reasons.

Work out the percentage of the pupils at the school who are absent on this day.
You **must** show your working.

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Answer …………………………………………………… %

(Total 4 marks)

7. (a) During 2003 the average wage earned by some factory workers in Barnsley rose from
£350 to £372.
What was the percentage increase?

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Answer ....%

(3)

(b) During 2003 the number of people out of work in Barnsley fell by 8%.
At the end of the year there were 2576 people out of work in Barnsley.
How many people were out of work at the beginning of the year?

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Answer …...

(3)
(Total 6 marks)

8. Gotland is an island which forms part of Sweden. The area of Gotland is 3140 square kilometres.
This area is 0.8% of the total area of Sweden.

What is the total area of Sweden?

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Answer …………………………………........ square kilometres

(Total 3 marks)

9. Karen saw a laptop for sale in 2004.
In March 2005, the price of this laptop was reduced by 20%.
In June 2005, the price of this laptop was reduced by one sixth of the March 2005 price.

Compared with the 2004 price, what percentage discount would Karen obtain by buying this laptop in June 2005?

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Answer .... %

(Total 4 marks)

10. Louise sold some items on the internet for £94.50
She calculated that she made a profit of 26% on the cost price of the items.
However, when doing her calculation she forgot that she spent £3.50 on postage.

Work out her correct percentage profit.

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Answer ....%

(Total 6 marks)

11. There is a 3-stage selection procedure for places on a university course.
The table shows the percentage of candidates who pass each stage.
Candidates who do not pass a stage do not go on to the next stage.

Stage	Percentage of candidates who pass each stage
1	50
2	60
3	x

The percentage of candidates that pass all three stages is 25.5%

Find the value of x.

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Answer ....

(Total 3 marks)

12. Items in a computer shop are priced to make a 37% profit.
In a sale, the prices are reduced by 12%.

Calculate the percentage profit on items sold in the sale.

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Answer .... %

(Total 3 marks)

Success:

Target: