Section A   Finding the New Amount   Grade E → C

1.   Work out 20% of 155.

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Answer £ ……………………………………

(Total 2 marks)

2.   Work out 1% of £21 350.

Answer £ ....

(Total 2 marks)

3.   Calculate 36% of £420.

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Answer £ ....

(Total 2 marks)

4.

| 60% of £40 | $\frac{2}{5}$ of £55 |

Which is the larger amount? You **must** show your working.

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Answer ....

(Total 4 marks)

5.   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 £ ....

(Total 3 marks)

6. Simon uses this method to work out $87\frac{1}{2}$ % of 240.

50 % of 240 = 120
25 % of 240 = 60
$12\frac{1}{2}$ % of 240 = 30

Adding $87\frac{1}{2}$ % of 240 = 210

(a) Use Simon's method to work out $87\frac{1}{2}$ % of 96. You **must** show your working.

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Answer …………………………………………………………..

(2)

(b) Pete says that he can work out $93\frac{3}{4}$ % of 240 by using Simon's method with one extra step. Explain how Pete can do this.

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Success:

(2)(Total 4 marks)

7. Jim receives his electricity bill. The bill is for £140 plus VAT at 5%.

(a) Calculate the VAT.

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Target:

Answer £ …………………………….

(2)

(b) Hence find the total amount which Jim has to pay.

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Answer £ ....

(1)(Total 3 marks)

8. The price of a computer is £840. In a sale the price is reduced by 15%. What is the sale price?

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....

Answer £ ....

(Total 3 marks)

| **Section B** | **Finding the % Change** | **Grade C** |

1. Karl was given £8 pocket money each week in 2004.
    In 2005, his pocket money was decreased to £6 each week.

    Calculate the percentage decrease in Karl's pocket money.

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    ....

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    Answer .... %
    (Total 3 marks)

2. A train is travelling at 60 miles per hour.
    The train increases its speed to 81 miles per hour.

    Calculate the percentage increase in the speed of the train.

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    Answer ....%
    (Total 3 marks)

3. Mike bought 400 books for £150 to sell at a Saturday market. He sold the books for £180.

    What was Mike's percentage profit?

    .....……...

    .....……...

    Answer ....%
    (Total 3 marks)

4. In 1974 the number of students in a college was 5000.
    This year the number of students is 5750.

    What is the percentage increase in the number of students in the college?

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    ....

    ....

    Answer .... %
    (Total 3 marks)

5. Simon weighed 3.6 kg when he was born.
One year later he weighed 10.8 kg.

Calculate the percentage increase in his weight.

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....

....

Answer ....%

(Total 3 marks)

Success:

Target:

Teacher Assessment

Section C   **Finding the Original Amount**   **Grade B**

1.   A bottle of 'Sunny Days' sun lotion contains 10% extra free. This bottle contains 220ml of lotion. How much lotion did the original bottle contain?

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Answer ....ml

(Total 3 marks)

2.   In a 25% off sale a coat costs £60. How much did the coat cost originally?

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Answer £ ....

(Total 3 marks)

3.   Bill the baker makes a 40% profit on his bagels. He sells his bagels for 21p each. How much profit does Bill make per bagel?

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Answer ....pence

(Total 3 marks)

4. As Kevin drove his brand new car off the forecourt it struck him that it was now worth 30% less than it was when he bought it. If Kevin's car is now only worth £9,800, how much did he pay for it?

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Answer £ ....

(Total 3 marks)

5. A special savings account earns 10% per year compound interest.

(a) Jill invests £2500 in the special account.
How much will she have in her account after 2 years?

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Answer £ ....

(3)

(b) James also invests in the special account.
After earning interest for one year, he has £1320 in his account.
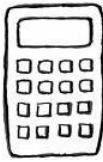How much money did James invest?

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Answer £ ....

(3)
(Total 6 marks)

Success:	Target:

Teacher
Assessment

| Section D | Repeated Percentage Changes | Grade B / A |

1. Barbara put £15 000 in a savings account on January 1st 2001.
Interest of 2% is added to the account on December 31st each year.

(a) How much is in the account on December 31st 2001?

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....

Answer £...

(2)

(b) Explain why the amount in the account after three years is £15 000 $\times 1.02^3$

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(2)
(Total 4 marks)

2. In January 2002 the population of Africa was 650 000 000.

The population of Africa is increasing at the rate of 2.9% per annum.

(a) Write down the single number that you need to multiply 650 000 000 by to calculate the population of Africa in January 2003.

....

Answer ....

(1)

(b) Assuming Africa's population continues to increase at the same rate, calculate the population of Africa in January 2020.

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Answer ....

(3)
(Total 4 marks)

3.   A dish contains 2000 bacteria. The number of bacteria increases by 16% per hour.

How many bacteria will be in the dish after 12 hours?

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Answer ....

(Total 3 marks)

4.   £4500 is invested at 3.2% compound interest per annum.
How many years will it take for the investment to exceed £5000?

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....

....

Answer .... years

(Total 3 marks)

5.   Annie invests £3000 for 5 years in a savings account that pays 4% compound interest per year.
How much will she have in the account at the end of 5 years?

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....

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Answer £ ……………………………..

(Total 3 marks)

6.   Mr Jones buys a new car for £50 000. The car decreases in value at the rate of 30% each year.
Find the value of the car after two years.

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Answer £ ……………………………………..

(Total 3 marks)

7. The value of a computer was £800 on 1st January 2003. Every three months, the value of the computer decreased by 6% of its value at the start of that three months.

What was the value of the computer on 1st January 2004?

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Answer £ ....

(Total 3 marks)

8. In 2000, a motorway was used by 70 000 vehicles each day.
Since 2000, the number of vehicles which used the motorway increased by 6% every year.

How many vehicles used the motorway each day in 2005?
Give your answer to an appropriate degree of accuracy.

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Answer …………………………………........

(Total 4 marks)

9. (a) Clare bought a cello for £1300. After one year its value increased by 4%.

Find the value of the cello after one year.

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....

Answer £ ....

(2)

(b) Ben bought a violin for £1700. In each year the value of the violin increases by 12% of its value at the start of that year. Calculate after how many complete years the value of the violin will be at least £2600. You **must** show all your working.

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Answer .... years

(4)(Total 6 marks)

10. There are 10 windmills in a line up a hillside.
Each windmill produces 20% more energy than the one below it.
The first windmill, the lowest on the hillside, produces 1.7 megawatts of energy.

(a) How much energy does the second windmill produce?

....

....

Answer .... megawatts

(1)

(b) How many of the windmills each produce more than 3 megawatts of energy?

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....

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Answer ....

(3)
(Total 4 marks)

11. John has £2000 to invest. He sees this advert.

Will John double his money in ten
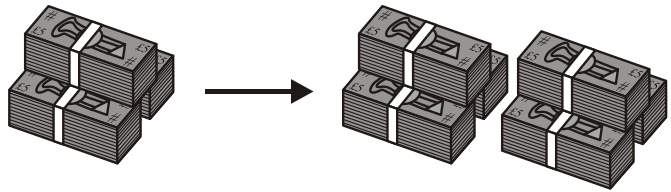years with SureFire Investments?
You **must** show your working.

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SureFire Investments
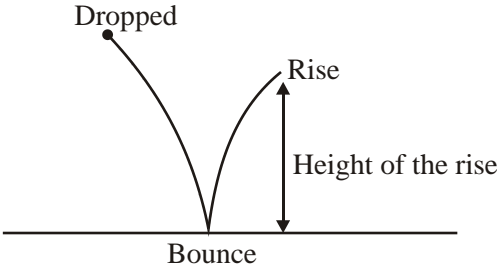
Don't see your money
go up in smoke!

Double your money in 10 years!

The average annual growth of our investment
account is **7.2%**

(Total 4 marks)

12. When a ball is dropped onto the floor, it bounces and then rises.
This is shown in the diagram.

The ball rises to 80% of the height from which it is dropped.
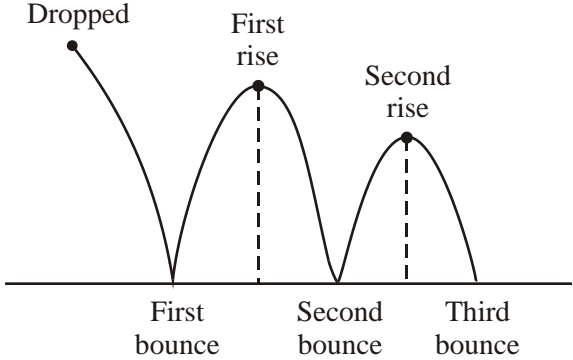The ball is dropped from a height of 4 metres.

(a)   Calculate the height of the rise after the first bounce.

....

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Answer .... metres

(1)

(b)   The ball bounces a second time. It rises to 80% of the height of the first rise.

(i)   Calculate the height of the second rise.

....

....

....

Answer .... metres

(1)

(ii)   The ball carries on bouncing in this way. Each time it rises to 80% of the last rise.

For how many bounces does it rise to a height greater than 1.75 metres?
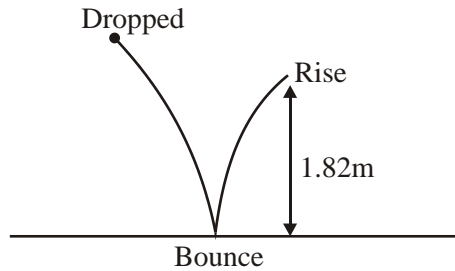You **must** show your working.

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Answer ....

(2)

(c)   A different ball is dropped onto the floor.
This ball rises to 70% of the height from which it is dropped.
The height of the rise after the first bounce is 1.82 metres.

Dropped

Rise

1.82m

Bounce

Calculate the height from which the ball is dropped.

....

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....

Answer .... metres

(3)
(Total 7 marks)

Success:

Target: