

Q1.

The pressure at sea level is 101 325 Pascals.

Any rise of 1 km above sea level decreases the pressure by 14%

For example,

at 3 km above sea level the pressure is 14% less than at 2 km

Work out the pressure at 4 km above sea level.

Give your answer to 2 significant figures.

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AnswerPascals

(Total 4 marks)

Q2. £1800 is invested at 4% compound interest per year.

How many years will it take for the investment to be worth £2000?

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Answer years

(Total 4 marks)

Q3. David invests £5000 in a savings account.
The account pays 3.2% compound interest per year.

Work out the value of his investment after 3 years.
Give your answer to the nearest penny.

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Answer £

(Total 4 marks)

Q4. Matthew invests some money in a building society.

His money earns 5% compound interest every year.
He wants it to be worth at least £9000 at the end of 3 years.

What is the smallest amount he can invest?

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Answer £

(Total 4 marks)

Q5.(a) A human cell nucleus has a diameter of 0.000 001 metres.

Write this number in standard form.

Answer

(1)

- (b) There are up to 5×10^{13} cells in a human body.

Write 5×10^{13} as an ordinary number.

Answer

(1)

- (c) A patient has a disease.
She has 4^3 body cells affected on day 1.

The number of affected cells doubles every day.
The disease becomes serious when 2^{10} body cells are affected.

On which day does the disease become serious?
You **must** show your working.

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Day

(3)

(Total 5 marks)