**1** Matt deposits £2500 in the Standard account for 12 months.
It earns compound interest at the rate of 0.58 % paid every 3 months.

**1 (a)** Complete the table below.

| | Starting value (£) | Interest (£) | Final value (£) |
|---|---|---|---|
| First 3 months | 2500.00 | 14.50 | 2514.50 |
| Second 3 months | 2514.50 | 14.58 | 2529.08 |
| Third 3 months | 2529.08 | 14.67 | 2543.75 |
| Fourth 3 months | 2543.75 | 14.75 | 2558.50 |

*(4 marks)*

0.58% = 0.0058

*Space for working*

2529.08 x 0.0058 = 14.668664

= 14.67 (2dp)

if 5 or more round up the previous number

2543.75 x 0.0058 = 14.75375 = 14.75

**1 (b)** Write down the total interest which Matt has received in the year.

14.50 + 14.58 + 14.67 + 14.75 = 58.50

Answer £58.50

*(1 mark)*

**1 (c)** Hence calculate the AER on this investment.

$\frac{58.50}{2500} \times 100\% = 2.34\%$

Answer .....

*(2 marks)*

$$\frac{\text{change}}{\text{original amount}} \times 100\% =$$

**2 (a)** Carol bought mascara.
The usual price of the mascara was £8.99.
How much did Carol pay?

12% = 0.12

1 - 0.12 = 0.88

£8.99 x 0.12 = 1.0788 = £1.08 (2dp)

£8.99 - £1.08 = £7.91

Answer .....

*(3 marks)*

**2 (b)** Rachel bought three lipsticks which normally cost £5.49 each.
In the sale, with the 'Buy two get one free' offer, Rachel paid £10.98 for the three lipsticks.
How much did Rachel pay for each lipstick?

£10.98 / 3 = £3.66

Answer .....

*(2 marks)*

**3 (a)** Susie and Louise spend £28 on a Sparkling Beauty Collection pack.
They decide to divide the cost in the ratio of 4:3, with Susie paying more.

How much does Susie pay?

4 + 3 = 7 shares

£28 / 7 = £4

4 x £4 = £16

Answer .....

*(3 marks)*

**3 (b)** Many articles are cheaper in airport duty-free shops.
In Lisbon airport, a bottle of perfume costs € 84 .
The exchange rate is € 1.21 to £ 1 .

£1 = E1.21

Calculate the cost of the bottle of perfume in pounds.

84 / 1.21 = 69.421487603305

£69.42

Answer .....

*(3 marks)*

**4 (a)** Complete the spreadsheet to give the most expensive cost as a percentage of the cheapest cost.

Give the percentages to the nearest integer. (whole number)

| | A | B | C | D |
|---|---|---|---|---|
| 1 | **Airport** | **Cheapest cost for parking (£)** | **Most expensive cost for parking (£)** | **Most expensive cost as a percentage of cheapest cost** |
| 2 | Birmingham | 44.64 | 71.50 | 160% |
| 3 | Gatwick | 38.90 | 51.20 | |
| 4 | Heathrow | 63.80 | 157.00 | |
| 5 | Manchester | 29.99 | 79.99 | |
| 6 | Stansted | 36.70 | 47.30 | |

*(5 marks)*

100%

$$\frac{71.50}{44.64} \times 100\ \% = 160.1702509$$

**4 (b)** State a formula which would give the content of cell D6.

.....

Answer (C6 / B6) * 100

*(1 mark)*

$$\frac{C6}{B6} \times 100$$

**4 (c)** Javian books and pre-pays £ 99.22 for four weeks' car parking at Heathrow.
This charge is only 22.55 % of the amount which he would have been charged if he had not prepaid.

Calculate the charge which Javian would have paid if he had not prepaid.

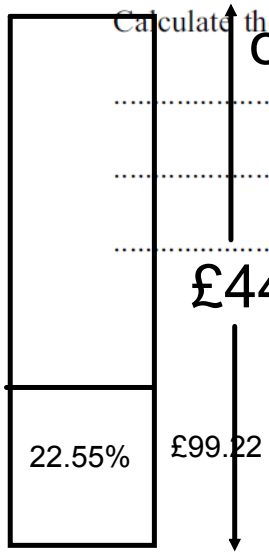
.....

.....

.....

Answer £440

*(3 marks)*




original = £99.22 / 22.55% = 4.40

£440

original x 0.2255 = £99.22

(÷ 0.2255)

original = £99.22 / 0.2255 = £440

**4 (d)** Colin says that he pays about £ 32 per week for his airport parking.

This amount is correct to the nearest pound.

What is the minimum possible cost to Colin for three weeks' parking?

.....

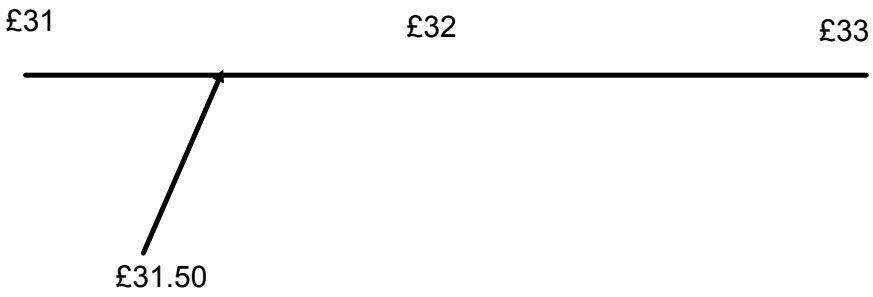
Lower bound is £31.50

.....

.....

Answer £31.50 x 3 = £94.50 .....

*(2 marks)*



**Solid Oak Credit Services**

The table below shows the monthly repayments, in pounds, for loans of different amounts and over different repayment periods.

| Loan amount | Repayment period | | | |
|---|---|---|---|---|
| | 12 months | 24 months | 36 months | 48 months |
| £ 250 | £ 23.13 | £ 12.71 | £ 9.24 | £ 7.51 |
| £ 500 | £ 46.24 | £ 25.38 | £ 18.43 | £ 15.00 |
| £ 750 | £ 69.34 | £ 38.05 | £ 27.68 | £ 22.48 |
| £ 1000 | £ 92.35 | £ 50.72 | £ 36.81 | £ 29.97 |
| £ 2000 | £ 184.51 | £ 101.36 | £ 73.51 | £ 59.91 |

## Section D

Answer **all** questions in the spaces provided.

*Use* **Solid Oak Credit Services** *on page 3 of the Data Sheet.*

| Loan amount | Repayment period | | | |
|---|---|---|---|---|
| | 12 months | 24 months | 36 months | 48 months |
| £ 250 | £ 23.13 | £ 12.71 | £ 9.24 | £ 7.51 |
| £ 500 | £ 46.24 | £ 25.38 | £ 18.43 | £ 15.00 |
| £ 750 | £ 69.34 | £ 38.05 | £ 27.68 | £ 22.48 |
| £ 1000 | £ 92.35 | £ 50.72 | £ 36.81 | £ 29.97 |
| £ 2000 | £ 184.51 | £ 101.36 | £ 73.51 | £ 59.91 |

**5** Daniel wants to buy an iPad. He decides to borrow £ 750 and to repay the loan over 24 months.

**5 (a)** Write down the monthly repayment which Daniel will make.

.....

£38.05

Answer .....

*(1 mark)*

**5 (b)** By finding the total repayments which Daniel makes to repay the loan, calculate the total interest which he will be charged for borrowing this money.

£38.05 x 24months = £913.20

.....

Interest paid = total payment - cash price = £913.20 =- £750 = £163.20

.....

£163.20

Answer .....

*(3 marks)*

**5 (c)** Express the total interest which Daniel will be charged for borrowing this money as a percentage of the amount borrowed.

$\frac{\text{change}}{\text{original}} \times 100\% = \frac{£163.20}{£750} \times 100\% = 21.76\%$

Answer 21.8% (to 1 dp)

*(2 marks)*

note: the mark scheme gives the answer to 1dp but allows 21.76% as an alternative

**6** Max earned £4108 per month and had a tax-free allowance of £7475.

Calculate: Annual salary = monthly salary x 12 = £49296

**6 (a)** Max's taxable income;

£4108 x 12 = £49296

TAXABLE INCOME = £49296 - £7475 = £41821

Answer £41821

*(3 marks)*

**6 (b)** the amount of income tax which Max paid in the year.

£41821 - £35000 = £6821

£41821

| | |
|---|---|
| £6821 | x 0.4 = £2728.40 |
| 35,000 | x 0.2 = £7000 |

£7000 + £2728.40 = £9728.40

**7** The annual rate, $R$, expressed as a decimal, at which a principal, £$P$, would increase to an amount, £$A$, in $n$ years is given by the formula

$$R = \sqrt[n]{\frac{A}{P}} - 1$$

An investment of £3500 has grown to £4506 in four years.
Find the annual rate of interest on this investment, expressed as a percentage.

A = £4506

P = £3500

n = 4

$$R = \left(\sqrt[4]{\frac{£4506}{£3500}}\right) - 1$$

$$= 0.06519908757$$

6.519908757

Answer 6.52%

*(3 marks)*

6.519908757 = 6.52%

8 A shopkeeper reduces all his original prices by 70 % for a sale.
At the end of the sale, the shopkeeper has a final clearance day when all the sale prices are reduced by a further 20 % of the sale price.
Emma buys an article at the final clearance day price.
What percentage of the original price does she pay?

70% = 0.7

1 - 0.7 = 0.3

£100 x 0.3 = £30

20% = 0.2

£30 x 0.8 = £24

1 - 0.2 = 0.8

$$\frac{£24}{£100} \times 100\% = 24\%$$

Answer 24%

*(4 marks)*