

## Revision F3 (Topics 1-3) [41]

1.

Suzi buys a computer in a sale.  
The original price of the computer was £650.



How much money does Suzi save?

(Total 2 marks)

2.

(a) (i) Factorise completely  $2a^2 - a$

(2)

(ii) Find the value of  $2a^2 - a$  when  $a = -4.5$

(2)

(Total 4 marks)

3.

Frank, Mary and Seth shared some sweets in the ratio 4 : 5 : 7  
Seth got 18 more sweets than Frank.

Work out the total number of sweets they shared.

(Total 3 marks)

4.

Written as the product of its prime factors

$$672 = 2^5 \times 3 \times 7$$

(a) Write 252 as the product of its prime factors.

[2 marks]

(b) Work out the value of the highest common factor of 672 and 252

[1 mark]

5.

Aimee receives a 20% salary increase.  
Her new salary is £18 000.

What was Aimee's salary before the increase?

(Total 3 marks)

6.

(a) Write these numbers in standard form

(i) 9 170 000

(1)

(ii) 0.000 048

(1)

(b) Find the value of  $(1.8 \times 10^{12}) \div (2 \times 10^8)$

(2)

(Total 4 marks)

7. (a) (ii) Should be divide not multiply i.e.  $e^7 \div e^2$

(a) Simplify

(i)  $c^3 \times c^5$  (1)

(ii)  $e^7 \times e^2$  (1)

(iii)  $(h^3)^2$  (1)

(b) Expand and simplify

(i)  $2k(k-3)$  (2)

(ii)  $(x+7)(x-2)$  (2)

(iii)  $(3y+1)(3y-1)$  (2)

(Total 9 marks)

8.

Karl and Lisa invest £5800 in a savings account.

The account pays a fixed rate of 2.3% per year compound interest for 5 years.

(a) Karl calculates that they will have £5162.98 in the account at the end of 5 years.

Without working out the correct answer, explain how you can tell that Karl's calculation is wrong.

(b) Here is Lisa's calculation to work out how much they will have at the end of 5 years.

$$£5800 \times 2.3^5 = £373\,307.89$$

Explain what Lisa has done wrong.

(c) Calculate how much they will have in the account at the end of 5 years.

(Total 5 marks)

9.

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.

(Total 6 marks)

10.

Prove algebraically that the recurring decimal  $0.3\dot{1}\dot{8}$  can be written as  $\frac{7}{22}$

(Total 2 marks)