

Percentage Problems

34 marks

1. In a sale all the normal prices are reduced by 18%.
In the sale Mandy pays £12.71 for a hat.

Calculate the normal price of the hat.

£.....

(Total 3 marks)

2. Loft insulation reduces annual heating costs by 20%.
After he insulated his loft, Curtley's annual heating cost was £520.

Work out Curtley's annual heating cost would have been, if he had not insulated his loft.

£

(Total 3 marks)

3. Henry invests £4500 at a compound interest rate of 5% per annum.

At the end of n complete years the investment has grown to £5469.78.

Find the value of n .

.....

(Total 2 marks)

4. A company bought a van that had a value of £12 000
Each year the value of the van depreciates by 25%.

(a) Work out the value of the van at the end of three years.

£

(3)

The company bought a new truck.
Each year the value of the truck depreciates by 20%.
The value of the new truck can be multiplied by a single number to find its value at the end of four years.

(b) Find this single number as a decimal.

.....

(2)

(Total 5 marks)

5. Mario invests £2000 for 3 years at 5% per annum **compound** interest.

Calculate the value of the investment at the end of 3 years.

£.....

(Total 3 marks)

6. Bill invests £500 on 1st January 2004 at a compound interest rate of $R\%$ per annum.
The value, £ V , of this investment after n years is given by the formula

$$V = 500 \times (1.045)^n$$

(a) Write down the value of R .

$R = \dots\dots\dots$

(b) Use your calculator to find the value of Bill's investment after 20 years.

£.....

(2)

(Total 3 marks)

7. Hajra's weekly pay this year is £240
This is 20% more than her weekly pay last year.

Bill says 'This means Hajra's weekly pay last year was £192'.

Bill is wrong,

- (a) Explain why.

.....
.....

(1)

- (b) Work out Hajra's weekly pay last year.

£.....

(2)

(Total 3 marks)

8. In a sale, normal prices are reduced by 15%.
The sale price of a CD player is £102

Work out the normal price of the CD player.

£.....

(Total 3 marks)

9. In a sale, normal prices are reduced by 12%.
The sale price of a DVD player is £242.

Work out the normal price of the DVD player.

£

(Total 3 marks)

10. A garage sells cars.
It offers a discount of 20% off the normal price for cash.

Dave pays £5200 cash for a car.

Calculate the normal price of the car.

£

(Total 3 marks)

11. In a sale, normal prices are reduced by 20%.



Andrew bought a saddle for his horse in the sale.
The sale price of the saddle was £220.

Calculate the normal price of the saddle.

£.....

(Total 3 marks)