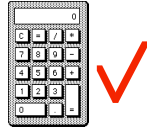## Chapter 19

Calculators may be used
from Exercise 2 onwards

Percentages

Exercise 1

1. Write the following percentages as FRACTIONS (simplify where possible) :-

    (a) 50%   (b) 25%   (c) 75%   (d) $33\frac{1}{3}\%$ (e) $66\frac{2}{3}\%$

    (f) 10%   (g) 20%   (h) 70%   (i) 80%   (j) 90%.

2. Find the following (remember - no calculator) :-

    (a) 10% of £34   (b) 70% of £20   (c) 20% of £6·50

    (d) 80% of 20p   (e) 25% of £4200   (f) $33\frac{1}{3}\%$ of £18

    (g) 5% of £7·20   (h) 1% of £9   (i) 2·5% of £6.

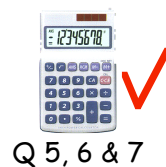3. Write each of the following as a fraction **AND** as a decimal :–

    (a) 36%   (b) 45%   (c) 8%   (d) 11%   (e) 12·5%.

4. Write these percentages as fractions and simplify :–

    (a) 15%   (b) 30%   (c) 4%   (d) 96%   (e) 22%.

5. Change these marks to percentages :–

    (a)   Geography   32 out of 40.
    (b)   Art   9 out of 50.
    (c)   Physics   60 out of 80.
    (d)   Mental Maths   1 out of 10.

    Q 5, 6 & 7

6. Find :-

    (a) 7% of £52   (b) 6% of £520   (c) $17\frac{1}{2}\%$ of £12.

7. The price of colour printers has fallen again this week by 12·5%.

    What is the up to date price of the printer shown.

    Last week
    £104·00

    Now

Exercise 2

1. Fares on the Subway Trains are expected to rise soon by 8%.

    What will be the new cost of a ticket which just now is priced £1·25 ?

2. In a sale, a polo shirt, normally priced at £25·50,
    is reduced by 30%.

    What is the sale price of the shirt ?

3. (a) Increase £70 by 3%.   (b)   Decrease £620 by 4·5%.

    (c) Increase £1220 by 17·5%.   (d)   Decrease £80 000 by 7·25%.

4. A petrol lawn mower bought for £180 in 2001 has depreciated
    in value over the past few years.
    It is now worth 84% **less** than its original value.

    What is the mower worth today ?

5. A unique painting was purchased in 2002 for £30 000.
    Since then its value has risen by 20% each year.

    If this trend continues, what is the first year in which the
    painting will be worth at least double its original value ?

6. Mildred borrows £2500 from a Finance Company.

    They add on interest of 12% in the first month, 20%
    in 2nd month and 25% in the third month.

    Including the amount she borrowed, how much will Mildred owe after 3 months ?

Exercise 3

1. Express £20 as a percentage of :-

    (a) £80   (b) £50   (c) £1000   (d) £4000.

2. Express :-

    (a) £39 as a percentage of £78   (b) £40 as a percentage of £120

    (c) £2·60 as a percentage of £40   (d) 90p as a percentage of £7·20.

3. From a monthly wage of £1450, I pay £94·25 in council tax.

    What percentage of my wage goes on council tax ?

4.   The local paper girl got paid £15·25 per week last year.

            This year her pay has risen to £17·99.

            What percentage pay rise did she receive ? (to 1 decimal place)

5.   A car bought new for £9280 was worth only £3300 a few years later.

     Calculate the depreciation, and express it as a percentage of the cost
     when new. (*Round to nearest whole %*)

6.   A rare vase bought for £80 some years ago has now been valued at £440 !

            Calculate the appreciation as a percentage of the buying price.

Exercise 4

1.   After a 20% pay rise Donald's wage for his part-time job rose to £72.

     Calculate Donald's wage before his pay rise.

2.   A jumper's price is reduced by 15%. It was on sale for £68.

            What was the original price of the jumper ?

3.   McGyll's Bus Company increased all of its ticket
     prices by 4%.

     What was the original cost for a bus ticket
     which now costs £1·30 ?

4.   A detached villa has appreciated in value by 14·5%.

            It is now valued at £148 850.

            Calculate the original value of the villa.

5.   The Gardening Store has a sale on.

     Calculate the original prices of these goods.

(a)
CONIFERS
17·5% OFF
Now   **£4·95**

(b)
**GARDEN
FURNITURE**
35% OFF
Now   **£299**

Revision Exercise

No calculator to be used in questions 1 and 2.
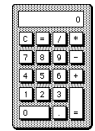
1. Write each of the following as a fraction in its simplest form and also as a decimal :-

    (a) 30%   (b) $33\frac{1}{3}$%   (c) 48%   (d) 7%   (e) 87·5%.

2. Find the following (remember, no calculator) :-

    (a) 50% of £54   (b) 30% of £70   (c) 25% of £8·40

    (d) 60% of 50p   (e) 10% of £3800   (f) $33\frac{1}{3}$% of £21

    (g) 5% of £3·20   (h) 2% of £6   (i) 12·5% of £8.

    You may use a calculator for the remainder of this exercise

3. I got 48 out of 60 in my maths ink exercise. What was my percentage mark ?

4. In a sale, a jacket, normally priced at £40·50, is reduced by 18%.

    What is the sale price of the jacket ?

5. Express :-

    (a) £46 as a percentage of £92   (b) £30 as a percentage of £90

    (c) £2·40 as a percentage of £30   (d) 96p as a percentage of £1·20.

6. Danny's hourly rate last year was £12·56.

    This year, his hourly rate has risen to £14·13.

    What percentage pay rise did he receive ?

7. A lawn mower's price was reduced by 25% in a sale.
    I bought one in the sale for £90.

    What was the cost of a lawn mower before the sale ?