

ARITHMETIC (Q 1, PAPER 1)

2000

- 1 (a) Express 400 grammes as a fraction of 1 kilogramme. Give your answer in its simplest form.
- (b) 1 euro = IR£ 0.787564
1 euro = DM 1.95583
- (i) Calculate the value of IR£100 in euro, correct to two places of decimals.
- (ii) Hence, calculate the value of IR£100 in Deutschmarks (DM), correct to two places of decimals.
- (c) A person has annual tax free allowances of IR£7400.
The person pays income tax at the rate of 24% on the first IR£12 400 of taxable income and at the rate of 46% on the remainder.
- (i) Calculate the amount of income tax paid on the first IR£12 400 of taxable income.
- (ii) Calculate the person's gross income if the total annual income tax paid is IR£5138.

SOLUTION

1 (a) Change to the units units, say grammes (g).

1000 grammes (g) = 1 kilogram (kg)

1 kg = 1000 g

Fraction: $\frac{400}{1000} = \frac{2}{5}$ [You can use the calculator.]

CALCULATOR: Simplify $\frac{400}{1000}$.

The calculator interface shows a keypad with buttons for digits 0-9, a fraction template button, a REPLAY button, and an equals button. The display shows the fraction $\frac{400}{1000}$ on the left and $\frac{2}{5}$ on the right.

1 (b) (i)

IR£0.787564 = 1 euro

IR£1 = $\frac{1}{0.787564}$ euro

IR£100 = $\frac{1}{0.787564} \times 100 = 126.97$ euro

1 (b) (ii) You know that IR£100 amounts to 126.97 euro.

$$1 \text{ euro} = \text{DM } 1.95583$$

$$126.97 \text{ euro} = 1.95583 \times 126.97 = \text{DM } 248.33$$

1 (c) This is the old way tax used to be assessed. We will show you the method even though you do not need to know it.

(i) IR£12,400 is taxed at 24%: $0.24 \times 12400 = \text{£}2,976$

(ii) Total tax paid: £5,138

$$\text{Tax paid at higher rate: } \text{£}5,138 - \text{£}2,976 = \text{£}2,162$$

$$\text{Total amount taxed at higher rate: } \frac{\text{£}2,162}{0.46} = \text{£}4,700$$

$$\text{Gross income} = \text{£}4,700 + \text{£}12,400 + \text{£}7,400 = \text{£}24,500$$