

Question 1

$$\begin{aligned}
 F &= P(1+i)^t \\
 &= 800(1+0.015)^{15} \\
 &= 800(1.015)^{15} \\
 &= 1000 \cdot 18\dots \\
 \text{€}1000 \cdot 18\dots &> \text{€}1000
 \end{aligned}$$

$$\frac{95}{0.8473} = 112.1208\dots \approx \text{€}112.12$$

Question 2

- (a) Alan pays income tax at the rate of 20%. He has weekly tax credits of €63. How much income tax does he pay?

$$\text{Total tax: } \text{€}510 \times 0.2 = \text{€}102$$

$$\text{Tax paid: } \text{€}102 - \text{€}63 = \text{€}39$$

$$\text{€}193 \times 0.02 = \text{€}3.86$$

$$\text{€}115 \times 0.04 = \text{€}4.60$$

$$\text{€}510 - (\text{€}193 + \text{€}115) = \text{€}202$$

$$\text{€}202 \times 0.07 = \text{€}14.14$$

$$\text{USC: } \text{€}3.86 + \text{€}4.60 + \text{€}14.14 = \text{€}22.60$$

- (c) Alan also pays PRSI. His total weekly deductions amount to €76.92. How much PRSI does Alan pay?

$$\text{PRSI} = \text{€}76.92 - (\text{€}39 + \text{€}22.60) = \text{€}15.32$$

Question 3

- (a) Find the total cost to the shopkeeper.

$$\begin{aligned}25 \times 30 &= 750 \\25 \times 20 &= 500 \\500 + 750 &= \text{€}1250\end{aligned}$$

- (b) The shopkeeper sells a blazer and a trousers as a set for €89.95. Find her profit on this transaction.

$$89.95 - 50 = \text{€}39.95$$

- (c) The shopkeeper sells 22 blazer and trouser sets at €89.95 each. She sells the remaining 3 sets at a discount of 20% on the selling price. Find her mark up (profit as a percentage of cost price) on the total transaction.

$$\begin{aligned}22 \times 89.95 &= \text{€}1978.90 \\89.95 \times 0.8 &= \text{€}71.96 \\3 \times 71.96 &= \text{€}215.88 \\1978.90 + 215.88 &= \text{€}2194.78 \\2194.78 - 1250 &= 944.78 \text{ (Profit)} \\ \frac{944.78}{1250} \times 100 &= 75.58\%\end{aligned}$$