2 Sandeep wants to buy some packets of pens and some boxes of pencils for his stationery shop.

Each packet of pens contains 9 pens.
Each box of pencils contains 12 pencils.

Each packet of pens costs £7.60
Each box of pencils costs £4.80

Sandeep can only buy full packets of pens and full boxes of pencils.
He wants to buy exactly the same number of pens as pencils.

Work out the minimum amount Sandeep needs to pay.

Pens : 9, 18, 27, ⑯36⑯, 45, 54

Pencils : 12, 24, ⑯36⑯, 48

Needs 4 packets of pens

$$4 \times £7.60 = £30.40$$

Needs 3 packets of pencils

$$3 \times £4.80 = £14.40$$

Total = 30.40 + 14.40

£ 44.80

(Total for Question 2 is 4 marks)

P 7 2 8 2 9 A 0 4 2 8

3 Behnaz makes candles.

She has 6.3 kilograms of wax and uses it all to make candles.
Each candle Behnaz makes uses 210 grams of wax.

Behnaz sells $\frac{2}{5}$ of the candles for $13 each.

She then reduces this price by 20% and sells the rest of the candles.

Work out the total amount of money Behnaz gets by selling all the candles she made.

$1\,kg = 1000\,g$

$6.3\,kg = 6300\,g$

$\dfrac{6300}{210} = 30$ He can make 30 candles

$\dfrac{2}{5} \times 30 = 12$ candles

$12 \times \$13 = \$156$

Rest of candles $30 - 12 = 18$ left

$20\% \times 13 = 2.60$

$13 - 2.60 = \$10.40$

$18 \times \$10.40 = \$187.20$

Total $= 187.20 + 156$

$ 343.20

(Total for Question 3 is 4 marks)

P 5 9 0 1 4 A 0 4 2 4

4 The language department of a college has 180 students.
Each student studies exactly one of French, German, Italian or Spanish.

15 students study French.
45% of the students study German.

Express the percentage of students studying Italian or Spanish as a percentage of those studying French or German.

$15 = \text{French}$

$45\% \times 180 = 81 \quad \text{German}$

$15 + 81 = 96 \quad \text{French or German}$

$180 - 96 = 84 \quad \text{Italian or Spanish}$

$$\frac{\text{Italian or Spanish}}{\text{French or German}} \times 100$$

$$\frac{84}{96} \times 100 = 87.5\%$$

....%

(Total for Question 4 is 4 marks)

3 There are 54 fish in a tank.
Some of the fish are white and the rest of the fish are red.

Jeevan takes at random a fish from the tank.
The probability that he takes a white fish is $\frac{4}{9}$

(a) Work out the number of white fish originally in the tank.

$$\frac{4}{9} \times 54 = 24$$

(2)

Jeevan puts the fish he took out, back into the tank.
He puts some more white fish into the tank.

Jeevan takes at random a fish from the tank.
The probability that he takes a white fish is now $\frac{1}{2}$

(b) Work out the number of white fish Jeevan put into the tank.

Start
white $\qquad \frac{24}{54} = \frac{4}{9}$

End $\qquad \frac{1}{2} \rightarrow \frac{30}{60}$

He puts 6 white fish in

(2)

(Total for Question 3 is 4 marks)

13 Carlos, Flavia and Tazia shared £861 between themselves.

The amount of money Flavia got is 65% of the amount of money Carlos got.
The amount of money Tazia got is 22% **more** than the amount of money Carlos got.

Work out how much money Carlos got.

Carlos   Flavia   Tazia

100%   65%   122%   = 287%

287% = 861

÷287 ⟶   1% = 3   ⟩÷287

×100 ⟶   100% = 300   ⟩×100

Carlos has £300

£ _____300_____

(Total for Question 13 is 3 marks)

13 Each month Edna spends all her income on rent, on travel and on other living expenses.

She spends $\frac{1}{3}$ of her income on rent.

She spends $\frac{1}{5}$ of her income on travel.

She spends $420 of her income on other living expenses.

Work out her income each month.

$\frac{1}{3} + \frac{1}{5} = \frac{8}{15}$ Rent + travel

$1 - \frac{8}{15} = \frac{7}{15}$ on living expenses

$420 = living expenses

$\frac{7}{15} = 420$

$\div 7$ $\div 7$

$\frac{1}{15} = 60$

$\times 15$ $\times 15$

$\frac{15}{15} = \$900$

$ ....900.......

(Total for Question 13 is 4 marks)