M4 =8 days to go!

13 A coat is priced £150

With 12% discount in a sale a profit of £7 is made.

What would the percentage profit be if the coat was sold at the full marked price?

Show all your working clearly.

12% discount of 150 = 18

Sold at £132 it makes £7 profit

So if sold at £150 it makes £25 profit

$$\% \text{ profit} = \frac{25}{\text{original}} \times 100$$

$$= \frac{25}{150} \times 100$$

Answer 16.6 % [5]

17 (nearest %)

15 The table shows information about 250 workers in a factory.

Work Area	Number of Women	Number of Men
Dispatch	4	28
Office	26	14
Design	15	12
Canteen	34	20
Production	29	68
	108	142

The manager decides to carry out a survey about the workers' views on a new logo for the company.

He decides to take a sample of 60 workers.

(a) One option is to go to the canteen at lunchtime and select 60 workers.

Give two reasons why this may not produce a representative sample.

1. Not everyone may use the canteen in the factory
2. Some workers from canteen may be working in the canteen [2]
3. Dispatch may have workers off site

The manager decides to use a stratified sample of 60 workers instead.

(b) Work out the number of women that should be in the sample.

Equal fractions are really important

$\frac{108}{250} = \frac{?}{60}$ $\frac{108 \times 60}{250} = 25.92$

Answer 26 [2]

(c) How many office workers should be in the sample?

26 + 14 = 40 office 9.6

$\frac{40}{250} = \frac{?}{60}$

Answer 10 [2]

(d) Suggest one way the manager could achieve an even more reliable sample.

Answer Take a bigger stratified sample [1]