**Percentages**

Percentages are vital in business; they allow managers to compare numbers to other numbers. A percentage is a fraction that is always out of 100. If a business finds 10% of its employees are regularly late for work this is the same as saying 10/100 or one tenth are regularly late for work. If the firm had 200 employees, 20 are regularly late for work. Percentages are calculated by dividing the number you want to express as a percentage by the total number, then multiplying by 100.

Hear is an example of how percentages allow managers to make comparisons and assess the actual scale of a problem. Imagine two businesses have eight employees leave as they felt bullied by their managers. No business wants any employees to leave for this reason, but with this information alone, it is hard to see the real magnitude of the problem. If you compare the number of leavers to the number of employees the business have in total, it is easier to make judgements.

|  |  |  |
| --- | --- | --- |
|  | Business A  | Business B |
| Number of employees leaving | 8 | 8 |
| Total number of staff employed | 16 | 800000 |

It is useful to work out the number of staff leaving due to bullying as a percentage of the total number of employees a business has.

This is done by dividing the number of employees who left due to bullying, by the total number of staff. You then multiply the number by 100 so it can be expressed as a percentage.

For business A this is 8/16 x100 = 50%

This is the equivalent to half the staff leaving due to bullying. This is a real problem for business A and should be investigated immediately.

For business B the percentage is 8/8000000 x 100 = 0.001%

The problem for Business B now seems nowhere as bad as Business A’s situation

**Part A worked examples**

1. Sarah completes her first business assessment. The maximum she could have scored was 40. Her mark was 35. What percentage did she score?

35/40 X100 = 87.5%

1. A car dealership has five salespeople. Table 1.7 shows how many cars were sold in July by each member of the sales team

|  |  |
| --- | --- |
| **Name** | **Number of cars sold in July** |
| Adam | 15 |
| Priya | 30 |
| Nick | 50 |
| Sam | 25 |
| Tom | 35 |

Of all the cars sold, what percentage did Sam sell (to 2 decimal places)?

* Step 1: the total number of cars sold is 15+30+50+25+35= 155 cars
* Step 2: Sam sold 25 cars, so Sam’s percentage is 25/155 x100 = 16.13%

In some situations you might be given a percentage and want to work back from it. Image 60% of a shop’s takings are from selling laptops. It makes £12000 from selling laptops one month. How much money did it make in total? The information tells you that 60% of its takings is equivalent to £12000. You have been asked to find 100%. One of the simplest ways of calculating this is by finding 1% initially, as shown here:

* 60% = £12000
* 1% = £200 (to find this divide both sides by 60)
* 100% = £20000 (both sides were multiplied by 100 to get the full takings)

Always estimate, calculate and check. If you put these figures back into the percentage formula you should get 60%: £12000/£20000 X100 = 60%

**Question B**

1. A business manufacturers and sells bottles of shampoo and bottles of conditioner. It sold 500 bottles of shampoo and 300 bottles of conditioner in one week. Out of all the bottles sold, what percentage were bottle of conditioner?

Hint: The total number of units sold was 500 +300 = 800 bottles

1. It was Jason’s job to check for faulty products before they were shipped to customers. One day 3% of the products he checked were faulty. He checked 2400 products in total. How many products were faulty? Complete the calculation:

Step 1 : 100% = 2400

Step 2: 1% = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 3: 3% = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question C**

1. A business has various members of staff working in different departments as summarised in Table 1.8. Calculate what percentage of the workforce is in the sales department:

Table 1.8

|  |  |
| --- | --- |
| **Department** | **Number of employees** |
| Sales | 2 |
| Production | 120 |
| Personnel | 3 |
| Accounts | 4 |
| Health & Safety | 1 |

1. An employee works in a biscuit factory. They are told that between 20% and 22.5% of each biscuit’s weight should be made up of chocolate. The employee analyses a sample of three biscuits. The results are shown in Table 1.9. Calculate which biscuits have an acceptable amount of chocolate on and which do not

Table 1.9

|  |  |  |
| --- | --- | --- |
| **Biscuit** | **Total weight of biscuit (g)** | **Weight of chocolate on business (g)** |
| A | 16 | 3 |
| B | 17 | 3.7 |
| C | 16.5 | 3.8 |

1. A business has six stores. The managing director looked at the sales of each store as a percentage of sales of the whole business in one month. The results are shown in Table 1.10. Frome accounted for £26,000 worth of sales that month.

|  |  |
| --- | --- |
| **Store name** | **% of sales made by branch** |
| Frome | 13% |
| Bath | 24% |
| Trowbridge | 17% |
| Salisbury | 5% |
| Bristol | 20% |
| Swindon |  |

Table 1.10

1. What percentage of sales did Swindon account for?
2. What was the total amount of money earned by the business that month?
3. What was the total amount of money earned by Bristol?
4. A hotel has various costs ranging from the rent of the building, staff wages, laundry costs, utility bills and so on. A manager calculates that of all the costs, 20% are rent and 45% are wage costs. The business spends £2970 on wages per week.
5. Calculate the business’s total cost per week
6. Calculate what the business spends on rent per year
7. If rent costs halved, then what would the firm’s new total cost be per week?