



Functional Skills Certificate

FUNCTIONAL MATHEMATICS

Level 2

Data Book (Examination)

Insert

Instructions

- This copy of the Data Book is for use in the examination. It should not be given to students in advance.

Advice

- This book will not be collected in for marking. Ensure that all working that you wish to have marked is written in the space provided in the question/answer book.

4368

QAN 500/8702/2

Data Sheet for Tenpin bowling



The game

A game has ten **frames** for each player.

In each frame, a player starts with ten pins to knock over.

A player bowls a ball one **or** two times in a frame.

If they knock over all ten pins with their first ball, their frame is complete.

This is called a **strike**.

If there are pins still standing, they bowl a second ball at the remaining pins.

If they knock them all over, this is called a **spare**.

Scoring

These examples show how to work out a player's score.

Example 1 – Sophie's first two frames

Frame 1

1st ball → 6 pins 2nd ball → 2 pins

Frame 2

1st ball → 5 pins 2nd ball → 4 pins

Here is the scoreboard after Frame 2

1		2	
6	2	5	4
8		17	
↑		↑	
6 + 2		8 + 5 + 4	

After Frame 1, Sophie's total score is 8

After Frame 2, Sophie's total score is 17

Example 2 – Mike's first two frames**Frame 1**

1st ball → 3 pins 2nd ball → 7 pins
spare

Here is the scoreboard after Frame 1

The symbol for a spare is /

1	
3	/

The total score after the spare cannot be worked out until Mike bowls his next ball.

A spare scores 10 + the number of pins knocked over with the player's next ball

Here is the scoreboard after Frame 2

1		2	
3	/	6	2
16		24	
↑		↑	
10 + 6		16 + 6 + 2	

After Frame 1, Mike's total score is 16

After Frame 2, Mike's total score is 24

Example 3 – Fatima's first two frames**Frame 1**

1st ball → 10 pins
strike

Here is the scoreboard after Frame 1

The symbol for a strike is **X**

Frame 2

1st ball → 5 pins 2nd ball → 4 pins

1	
X	

The total score after the strike cannot be worked out until Fatima bowls her next **two** balls.

A strike scores 10 + the number of pins knocked over with the player's next **two** balls

Here is the scoreboard after Frame 2

1		2	
X		5	4
19		28	
↑		↑	
10 + 5 + 4		19 + 5 + 4	

After Frame 1, Fatima's total score is 19

After Frame 2, Fatima's total score is 28

The scoreboard

Here is the scoreboard for a complete game between Sophie, Mike and Fatima.

	1	2	3	4	5	6	7	8	9	10											
Sophie	6	2	5	4	3	/	3	4	X		6	3	4	/	7	1	1	6	3	4	
	8		17		30		37		56		65		82		90		97		104		
Mike	3	/	6	2	2	/	5	4	X		6	/	4	3	7	2	X			6	3
	16		24		39		48		68		82		89		98		117		126		
Fatima	X		5	4	4	/	6	2	X		2	/	3	3	7	2	4	/		8	1
	19		28		44		52		72		85		91		100		118		127		

Sophie's final score is 104

Mike's final score is 126

Fatima's final score is 127

Fatima wins the game.

Data Sheet for Electricity

Electrical items use different amounts of electricity.

The electricity used depends on

the power of the item

the amount of time the item is switched on.

Power is measured in kilowatts (kW) or watts (W).

$$1 \text{ kW} = 1000 \text{ W}$$

Using electricity

The number of units of electricity an item uses, E , is worked out using the formula

$$E = PT$$

P is the power in kW

T is the time in hours

Example

A 3000 W electric fire is switched on for $2\frac{1}{2}$ hours.

$$P = 3000 \div 1000$$

$$= 3$$

$$T = 2.5$$

$$E = 3 \times 2.5$$

$$= 7.5$$

The fire uses 7.5 units of electricity.

Cost of electricity used

Work out Number of units of electricity used \times Cost per unit

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