



## Level 2 Certificate in Essential Skills Application of Number

### Sample 4

Candidate Name (First, Middle, Last)

Candidate enrolment number      DOB (DDMMYYYY)

Candidate signature and declaration\*

Assessment date (DDMMYYYY)      Centre number

#### Length of assessment:

**1 hour 30 minutes**

#### You should have the following for this assessment

- a pen with black or blue ink
- a pencil and eraser for graph/diagram work
- a 30cm ruler
- graph paper
- a calculator
- a protractor.

#### General instructions

- There are **2** tasks to complete.
- Each task is worth 25 marks.
- You should spend an equal amount of time on each task.
- Read through each task carefully.
- The maximum marks available are shown for each question.
- Show your working out, you may get marks for it.
- Check your calculations.



## Task 1 Orienteering

There are **25** marks available for this task.

**You should check all your work as you go along.**

### Introduction

This task is about a sport called orienteering.

You want to go orienteering.

### 1A

A local club sends out a leaflet about their next event.

Look at the leaflet on the next page.

Use the map to plan the best route to complete the course

**Draw your route on the map.**

**(3 marks)**

### 1B

Give **two** reasons why you chose this route.

**Reason 1**

**Reason 2**

**(2 marks)**



# Leaflet

## What is orienteering?

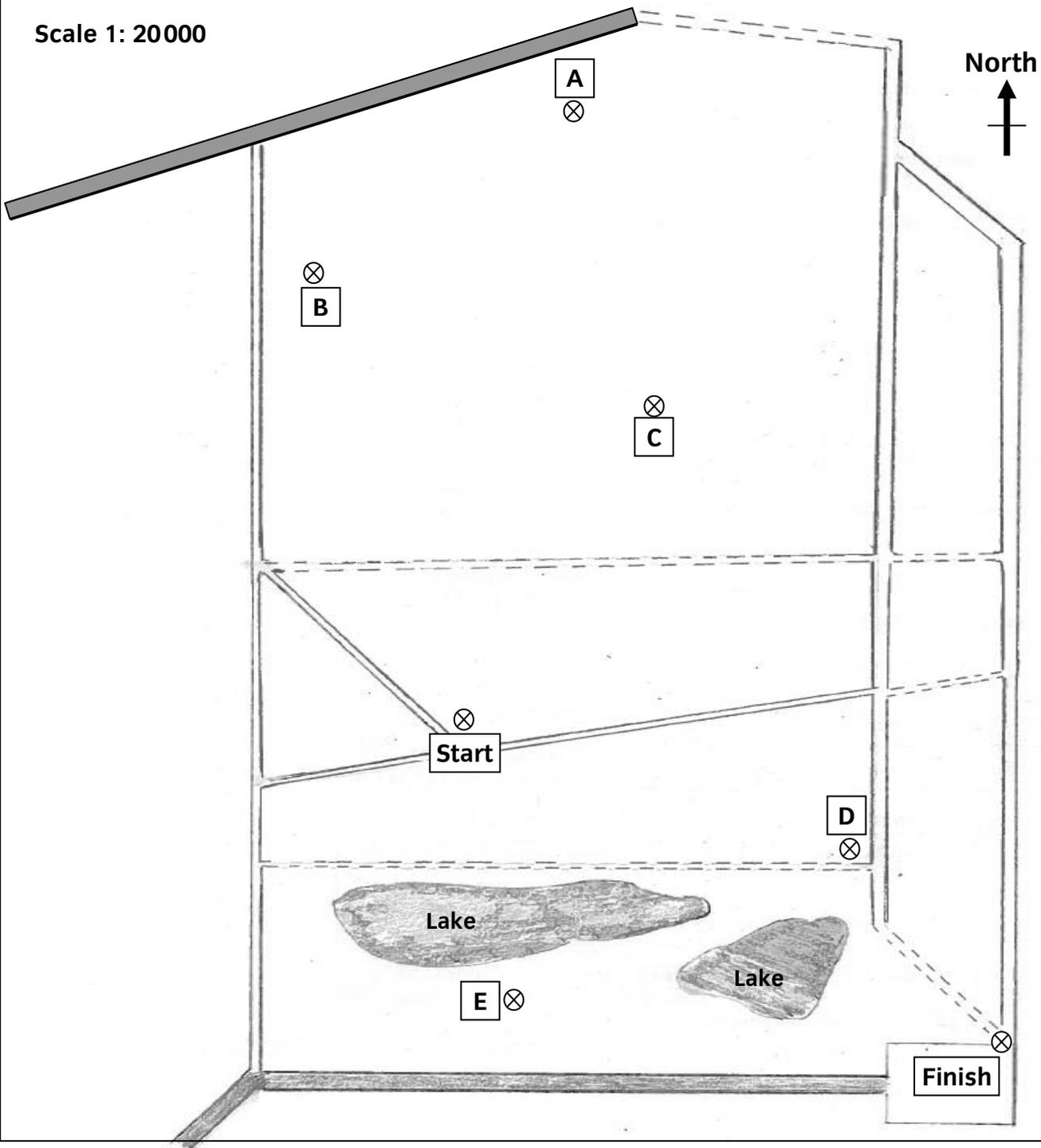
- Orienteering is about running or walking around a course finding checkpoints.
- You need to go to every checkpoint once.
- You can go to the checkpoints in any order.
- You do not need to stay on the roads or paths.

## Key

-  road
-  paths
-  checkpoint

## Map of the course

Scale 1: 20000



**1C**

Measure the distance of each stage between the checkpoints on your route.  
Write the checkpoints for each stage and their distances on the table below.

Space for working

Checkpoints			Distance of stage (cm)
<b>Start</b>	to		
	to	<b>Finish</b>	

(3 marks)

**1D**

Use your answers from **1C** and the scale on the map to work out the actual distance of each stage between the checkpoints on your route.

**Put units on your answers.**

Show your working

Checkpoints			Actual distance of stage
<b>Start</b>	to		
	to	<b>Finish</b>	

(5 marks)

**1E**

You need to allow approximately one hour to complete each **6km** of your route.

This formula works out how long each stage will take.

$$T = \frac{d}{s} \times 60$$

Where  $T$  = time in minutes  
 $d$  = distance in kilometres  
 $s$  = kilometres per hour

Use the formula and your answers from **1D** to work out how long each stage will take.

**Write your answers to the nearest minute.**

Show your working

Checkpoints			Time for stage (minutes)
<b>Start</b>	to		
	to	<b>Finish</b>	

**(5 marks)**

**1F**

Use your answers from **1E** to work out how long it will take to complete the whole route.

Show your working

**Time to complete the route** \_\_\_\_\_

**(1 mark)**

**1G**

Check one of your calculations in **1E**.

Use a different method to the one you used originally.

Write your check here

**(1 mark)**

**1H**

This table shows the event fees the club charges for members who take part in an orienteering activity.

Event fees - Members		
Adult	Student	Child
£7.60	£5.80	£3.40

The club charges non-members **15% more than** members for the event fee.

Work out how much non-members will pay.

Show your working

<b>Adult</b>	£
<b>Student</b>	£
<b>Child</b>	£

**(3 marks)**

**1I**

There are 5 adults (three are non-members), 4 students (two are non-members) and 2 children (both non-members) in a group.

Work out the **total cost** the group must pay to take part in the orienteering activity.

Show your working

**Total cost** £ \_\_\_\_\_

**(2 marks)**



## Task 2 Bowling team

There are **25** marks available for this task.

**You should check all your work as you go along.**

### Introduction

This task is about the performance of the players in a bowling team.

### 2A

The bowling team is made up of three players for each match.

The table shows the scores of three players over the last 10 matches.

Player Match	Jack	Emily	Anna
1	170	*	225
2	180	*	210
3	190	180	*
4	185	200	*
5	180	120	195
6	190	*	180
7	190	*	175
8	205	184	*
9	210	195	170
10	215	190	160

**\* did not play**

What percentage of the scores were **over 200**?

Show your working

Percentage over 200 \_\_\_\_\_ %

**(2 marks)**

**2B**

Work out a suitable average for each player's score.

<b>Tick the average you will use</b> (Tick one box)	<b>Mean</b>	<input type="checkbox"/>	<b>Median</b>	<input type="checkbox"/>	<b>Mode</b>	<input type="checkbox"/>							
	Show your working												
<table border="1"><thead><tr><th>Player</th><th>Average</th></tr></thead><tbody><tr><td>Jack</td><td></td></tr><tr><td>Emily</td><td></td></tr><tr><td>Anna</td><td></td></tr></tbody></table>						Player	Average	Jack		Emily		Anna	
Player	Average												
Jack													
Emily													
Anna													

(4 marks)

**2C**

Explain why the average you used in **2B** is the most suitable.

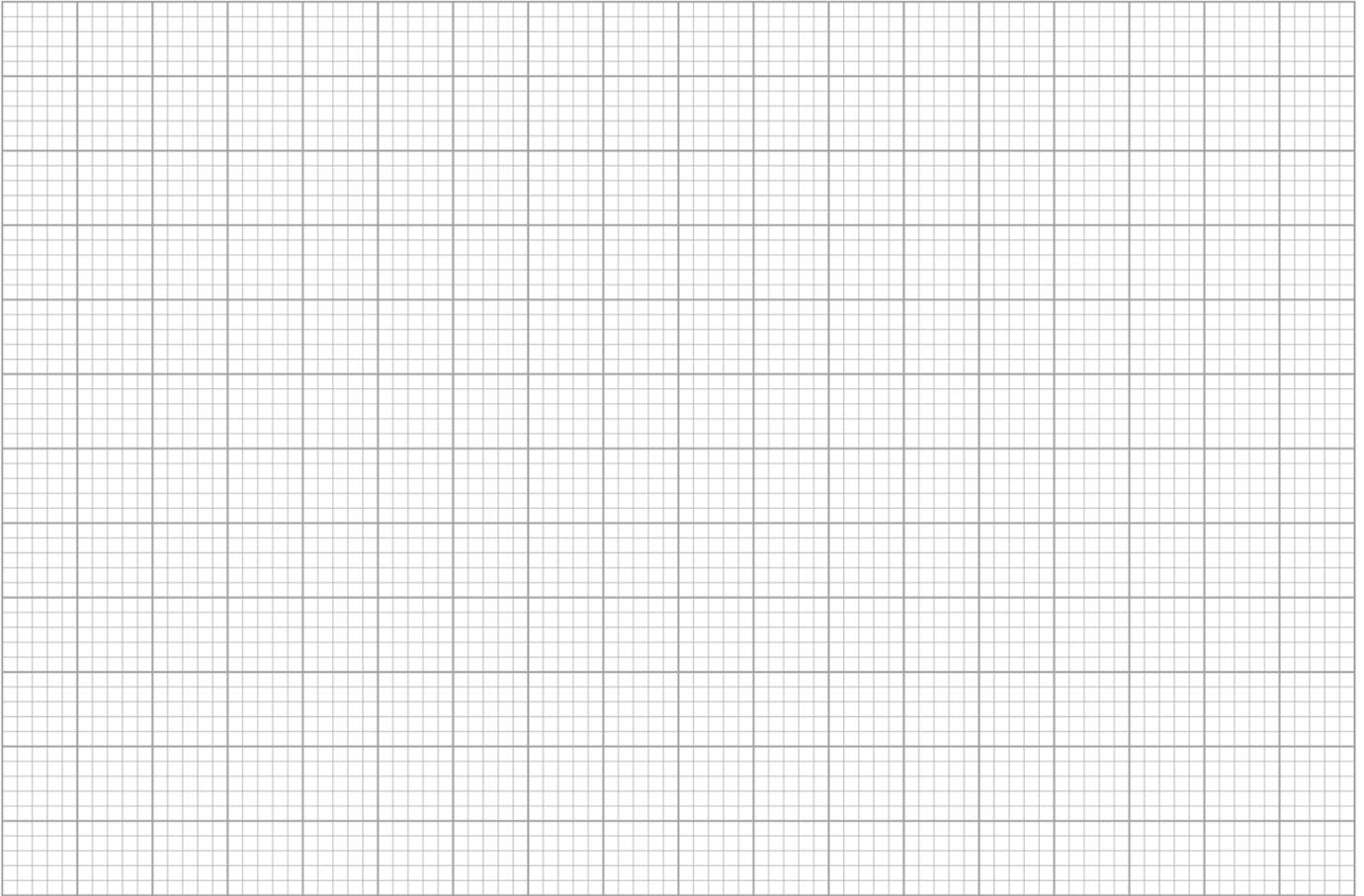
<b>Explanation</b>
--------------------

(1 mark)



**2D**

Use your answers from **2B** to draw a suitable chart to compare the average scores of each player.



**(4 marks)**

**2E**

The table shows the scores of three players over the last 10 matches.

<b>Player</b>			
<b>Match</b>	<b>Jack</b>	<b>Emily</b>	<b>Anna</b>
<b>1</b>	<b>170</b>	<b>*</b>	<b>225</b>
<b>2</b>	<b>180</b>	<b>*</b>	<b>210</b>
<b>3</b>	<b>190</b>	<b>180</b>	<b>*</b>
<b>4</b>	<b>185</b>	<b>200</b>	<b>*</b>
<b>5</b>	<b>180</b>	<b>120</b>	<b>195</b>
<b>6</b>	<b>190</b>	<b>*</b>	<b>180</b>
<b>7</b>	<b>190</b>	<b>*</b>	<b>175</b>
<b>8</b>	<b>205</b>	<b>184</b>	<b>*</b>
<b>9</b>	<b>210</b>	<b>195</b>	<b>170</b>
<b>10</b>	<b>215</b>	<b>190</b>	<b>160</b>

**\* did not play**

Work out the range of scores for each player.

Show your working

<b>Player</b>	<b>Range</b>
<b>Jack</b>	
<b>Emily</b>	
<b>Anna</b>	

**(3 marks)**



**2F**

Explain what these ranges tell you about the scores of the three players.  
Make **two** comments.

**Comment 1**

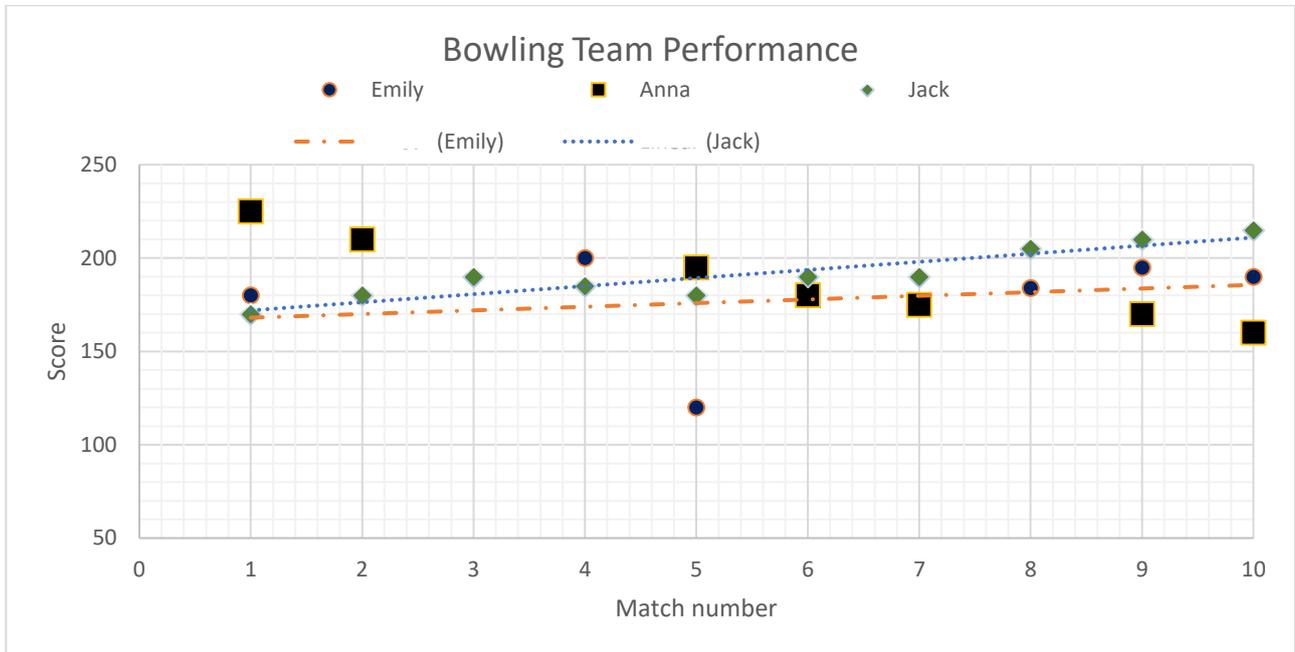
**Comment 2**

**(2 marks)**



**2G**

The bowling team manager records the information about the performance of each player on this graph.



He has drawn trend lines (lines of best fit) for Jack and Emily.

Use the trend lines to compare Jack's performance with Emily's performance.

Explain what their trend lines tell you. Make **two** comments.

**Comment 1**

**Comment 2**

**(2 marks)**

**2H**

Draw a straight trend line (line of best fit) on the graph in **2G** to show Anna's performance.

Explain what the trend line tells you.

Make **one** comment.

**Comment**

**(2 marks)**

**21**

The bowling alley has a special offer for students.

**Student deal -  
two games for the price of one**

**Two easy steps**

- 1. register online to accept the deal**
- 2. book your games**

They sent out 1000 leaflets about the offer.

They expect **three-quarters** of this number to register online and **half** of the people who register to actually book games.

Use this information to work out the probability that a student who receives a leaflet will register online and book games.

Draw a diagram (tree diagram or probability scale) to show your answer.

Show your working

Probability \_\_\_\_\_

Draw your diagram here

**(4 marks)**

**2J**

Use your probability from **2I** to work out how many of the 1000 students who received the leaflet are likely to register online and book games.

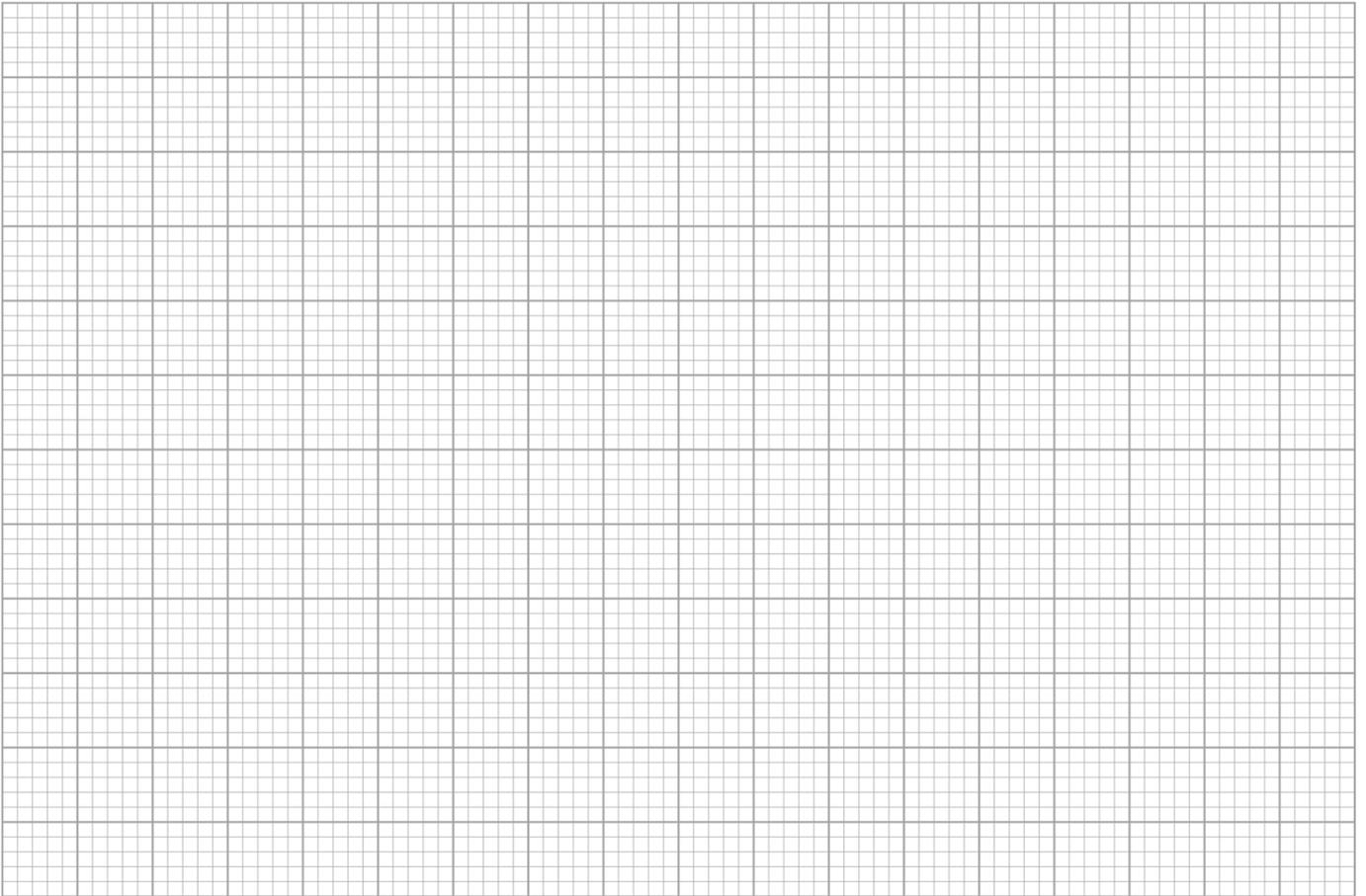
Show your working

**Number of students likely to book games** \_\_\_\_\_

**(1 mark)**



**Spare graph paper for 2D only**





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