

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
LEVEL 2 FUNCTIONAL SKILLS MATHEMATICS

09866

TASK AND ANSWER BOOKLET PRACTICE PAPER 2

TIME: 1 HOUR 30 MINUTES

INSTRUCTIONS

Fill in all the boxes below. Make sure your personal details are entered correctly. Use **BLOCK LETTERS**.

Your surname or family name

Your first forename (if any)

Your second forename (if any)

Date of birth

Centre name

Centre number

Your OCR candidate number

At the beginning of this booklet you will find tear off Resource Documents. You will need to refer to these documents to complete the tasks.

You will also need:

- a pen with black ink
- a calculator
- a ruler

YOU HAVE 1 HOUR AND 30 MINUTES TO COMPLETE THE THREE TASKS

For each task, make sure that you:

- read the questions carefully before starting
- write your answers in this booklet
- clearly show how your working leads to your answers

2 marks are available in each task when you show you have checked your work.

When you have finished, hand this booklet and all the Resource Documents to the supervisor.

Ofqual Qualification Reference Number: 500/8910/9

FOR EXAMINER USE ONLY		
Question No	Mark	Total
TASK A		
1	/8	/20
2	/3	
3	/9	
TASK B		
1	/3	/20
2	/5	
3	/12	
TASK C		
1	/2	/20
2	/9	
3	/9	
Total	/60	

This document consists of 28 pages. Any blank pages are indicated.

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RESOURCE DOCUMENTS

The Resource Documents on pages 5, 7, 9, 11 and 13 contain information to help you to answer the tasks in this booklet.

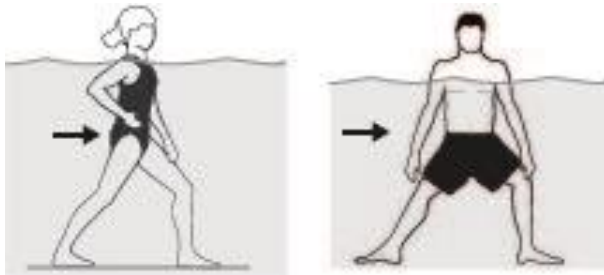
- The resource documents are perforated along the left hand side, so they can be removed from the task and answer booklet.
- Your supervisor will instruct you when to remove the resource documents, before you start the assessment.
- Please fold pages 5, 7, 9, 11 and 13 along the perforated strip before removing from the task and answer booklet.

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TASK A – Sports injury**RESOURCE DOCUMENT 1****Information: exercise in water**

These exercises should be done in water that is

- chest deep
- 78 - 86° F in temperature

Hip ExercisesKnee Exercise**Conversion table**

1 mile = 1609.3 metres

1 foot = 0.3048 metres

1 mile = 5280 feet

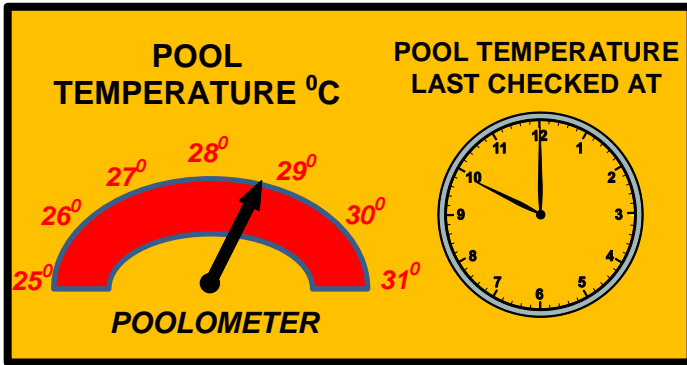
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TASK A – Sports Injury

RESOURCE DOCUMENT 2

Information at Hightown Swimming Pool



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TASK B – Volcano Night

RESOURCE DOCUMENT 1

Calendar and Tide Table for Alnmouth

August

			01 Thurs	05.34 LT 11.52 HT 18.14 LT	02 Fri	00.34 HT 06.50 LT 13.07 HT 19.20 LT	03 Sat	01.37 HT 07.54 LT 14.10 HT 20.17 LT	04 Sun	02.28 HT 08.44 LT 14.58 HT 21.02 LT			
05 Mon	03.10 HT 09.26 LT 15.39 HT 21.41 LT	06 Tues	03.49 HT 09.64 LT 16.16 HT 22.16 LT	07 Wed	04.23 HT 10.39 LT 16.51 HT 22.50 LT	08 Thurs	04.56 HT 11.13 LT 17.24 HT 23.23 LT	09 Fri	05.29 HT 11.47 LT 17.57 HT 23.55 LT	10 Sat	06.03 HT 12.21 LT 18.30 HT	11 Sun	00.29 LT 06.37 HT 12.56 LT 19.05 HT
12 Mon	01.13 LT 07.15 HT 13.34 LT 19.43 HT	13 Tues	01.44 LT 07.57 HT 14.17 LT 20.28 HT	14 Wed	02.32 LT 08.39 HT 15.10 LT 21.23 HT	15 Thur	03.33 LT 09.54 HT 16.17 LT 22.33 HT	16 Fri	04.50 LT 11.16 HT 17.38 LT 23.55 HT	17 Sat	06.18 LT 12.43 HT 18.59 LT	18 Sun	00.12 HT 07.35 LT 13.57 HT 20.07 LT
19 Mon	02.18 HT 08.39 LT 14.58 HT 21.04 LT	20 Tues	03.12 HT 09.33 LT 15.49 HT 21.53 LT	21 Wed	04.01 HT 10.20 LT 16.35 HT 22.37 LT	22 Thurs	04.46 HT 11.04 LT 17.17 HT 23.18 LT	23 Fri	05.27 HT 11.45 LT 17.56 HT 23.58 LT	24 Sat	06.07 HT 12.24 LT 18.34 HT	25 Sun	00.35 LT 06.45 HT 13.02 LT 19.11 HT
26 Mon	01.13 LT 07.24 HT 13.40 LT 19.49 HT	27 Tues	01.52 LT 08.04 HT 14.20 LT 20.29 HT	28 Wed	02.36 LT 08.50 HT 15.06 LT 21.18 HT	29 Thurs	03.30 LT 09.49 HT 16.07 LT 22.22 HT	30 Fri	04.43 LT 11.08 HT 17.27 LT 23.44 HT	31 Sat	06.11 LT 12.36 HT 18.49 LT		

The sea comes in and goes out twice in every 24 hour period.

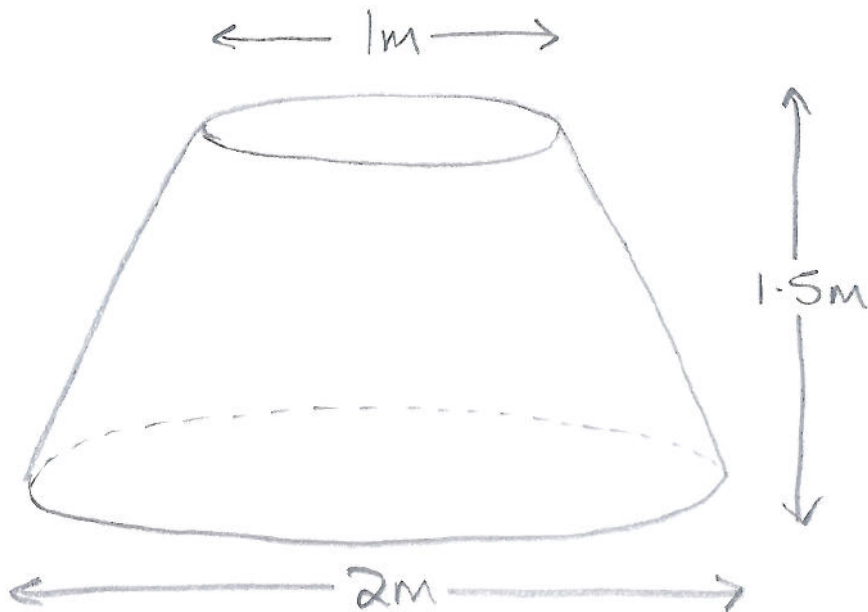
High Tide (HT) is when the sea is furthest in and **Low Tide (LT)** is when the sea is furthest out.

On most days, there are two high tides and two low tides. The times of the high and low tides change each day.

Tide tables give the times of the high and low tides each day for sailors and people using the beach.

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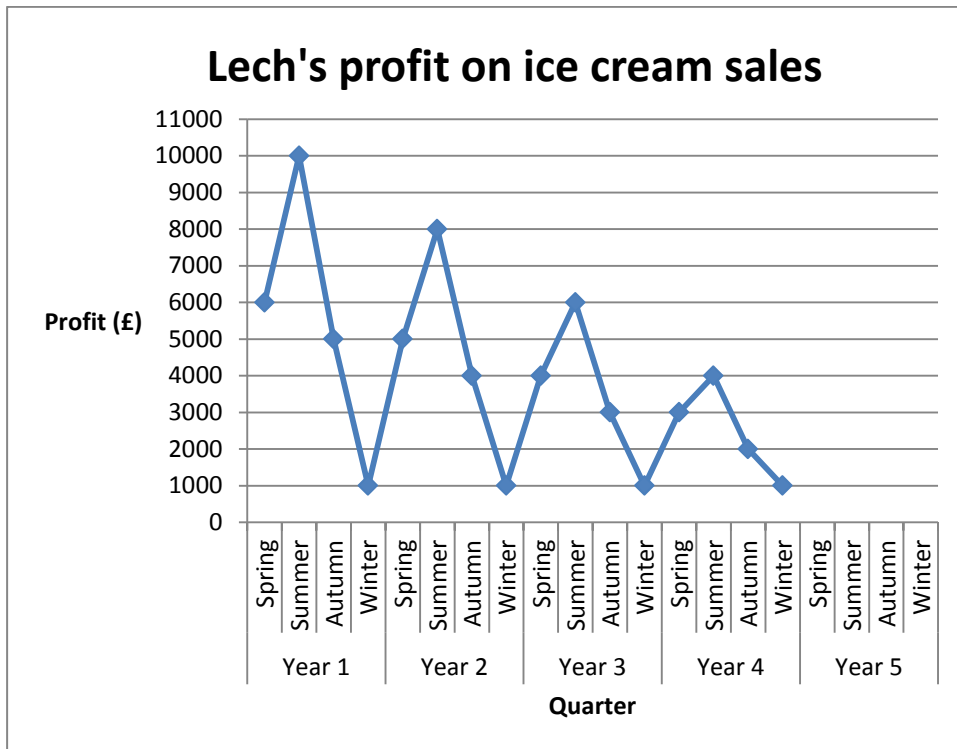
TASK B – Volcano Night**RESOURCE DOCUMENT 3****Zak's sketch of a mound of sand****Formula for volume of sand:**

$$\text{Volume of sand} = \left(\frac{7\pi h}{12}\right)m^3 \quad \text{where } h = \text{height in metres}$$

Use $\pi = 3.14$ or use the button on your calculator

Conversion table
1 m = 100 cm
1 cm ³ m ² = 10 000 cm ²
1 cm ³ m ³ = 1 000 000 cm ³
1 litre = 1000 cm ³

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TASK C – Ice Cream Van**RESOURCE DOCUMENT 1**

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TASK AND ANSWER PAGES

Do not turn over this page until you are told to do so by your supervisor.

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TASK A – Sports Injury

You will need Task A Resource Documents1 and 2.

Alex is recovering from a sports injury.
His coach tells him to do some hip and knee exercises in water to help him get better.
He gives Alex an information sheet that explains what to do.

Alex is 6 feet tall.

Q1 (a) How tall is Alex in metres?

(2 marks)

(b) Is Hightown swimming pool the right depth for Alex to do the exercises?
Explain how you decide.

(2 marks)

Alex looks up this formula for converting °C to °F.

$$^{\circ}\text{F} = (^{\circ}\text{C} \times \frac{9}{5}) + 32$$

(c) Is Hightown swimming pool the right temperature for Alex to do the exercises?
Show your working.

(4 marks)

Examiner
use only
(Q1)

(7 marks)

**Examiner
use only
(Q3)**

Checking (2 marks)

Examiner
use only
(Checking)

Total marks Q3 plus Checking

Examiner
use only
(Total)

END OF TASK A

[Turn over

TASK B – Volcano Night

You will need Task B Resource Documents 1, 2 and 3.

Volcano Night is a competition held every year on the beach at Alnmouth.

Each team builds a mound of sand and lights a bonfire on top.

The winning team is the one whose bonfire burns for the longest as the tide comes in and washes away the mounds of sand.



The next Volcano Night will be held on the fourth Saturday in August.

Q1 (a) What date is the fourth Saturday in August?

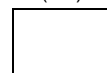
_____ (1 mark)

The competition will start 4 hours after low tide.

(b) At what time will the competition start?

_____ (2 marks)

Examiner
use only
(Q1)



On Volcano Night, 15 members of the Youth Club decide to split into two teams. They draw lots to see who will be in Team 1 and who will be in Team 2. They put 15 counters in a bag.

- 7 of the counters have the number 1 written on them
- 8 of the counters have the number 2 written on them

Everyone picks a counter (without looking) until the bag is empty. The number on their counter decides which team they will join.

Zak picks first.

- Q2 (a)** What is the probability that Zak joins Team 1?
Give your answer as a fraction.

(2 marks)

After the teams have been chosen, Anya (A), Bill (B), Chris (C) and Davinder (D) arrive. Two of them will join each team.

- (b)** Complete the following table to show **all** the different ways they could be paired. Two have been done for you.

<u>Team 1</u>		<u>Team 2</u>
A and B	+	C and D
C and D	+	A and B

Examiner
use only
(Q2)

(3 marks)

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Zak does a sketch to show the size and shape of the mound he thinks his team should build.

Q3 (a) What is the volume of the sand in the mound Zak wants to build?
Give your answer in m³.

(4 marks)

(b) How many cm³ of sand are in the mound Zak wants to build?

(2 marks)

Davinder says, "That mound is too big! We have 9 people in our team and each person has a 2 litre bucket. Each of us will have to collect more than two hundred bucket-loads of sand!"

(c) Is Davinder right? Show how you decide.

(4 marks)

Examiner
use only
(Q3)

Checking (2 marks)

Examiner
use only
(Checking)

**Total marks Q3 plus
Checking**

Examiner
use only
(Total)

END OF TASK B

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TASK C – Ice Cream Van**You will need Task C Resource Document 1**

Lech has an ice cream van.

His newspaper says, “In the 1950s there were about 20,000 ice cream van operators in Britain – now there are less than a quarter of that number.”

Q1 Estimate how many ice cream van operators there are in Britain now.

(2 marks)

Examiner
use only
(Q1)

Lech looks at a graph of his profits from ice cream sales in the last four years.

Q2 (a) What was Lech’s total profit in year 4?

(3 marks)

(b) Lech says, “My yearly profits have decreased by 55% since year 1”.
Is he correct? Explain how you decide.

(4 marks)

(c) What would you estimate Lech’s profits will be in year 5 if the trend continues?

(2 mark)

Examiner
use only
(Q2)

Lech parks for 20 minutes in one place for people to buy ice creams. He then drives for 4 minutes to his next stop. He keeps doing this for as long as he is working.

Lech’s van has a musical jingle to tell people that his van is nearby.

The law states that he is allowed to play the jingle

- only when the van is moving
- for 12 seconds every two minutes
- only between noon and 7pm.

Q3 What is the maximum total time that Lech can play the jingle in one day?
Give your answer in minutes and seconds.

(7 marks)

Examiner
use only
(Q3)

Checking (2 marks)

Examiner
use only
(Checking)

Total marks Q3 plus Checking

Examiner
use only
(Total)

END OF TASK C

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