**Pearson Edexcel**
**Functional Skills**

Centre Number

Candidate Number

# Mathematics

**Level 2**

6 – 10 November 2017
**Time: 1 hour 30 minutes**

Paper Reference
**FSM02/01**

**You must have:**
Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, compasses.

Total Marks

**My signature confirms that I will not discuss the content of the test with anyone until the end of the 5 day test window.**

**Signature:** _____

## Instructions

- Use a **black** ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Sign the declaration.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**

## Information

- The total mark for this paper is 48.
- The marks for each question are shown in brackets
  – *use this as a guide to how much time to spend on each question.*
- **You must show clearly how you get your answers because marks will be awarded for your working out.**
- **Check your working and your answers at each stage.**
- **This sign shows where marks will be awarded for showing your check.**

## Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.

*Turn over* ▶

P 5 7 0 8 9 A 0 1 2 0

**Pearson**

## SECTION A: The plasterer

**Answer all questions in this section.**

**Write your answers in the spaces provided.**

**1** Georgie is a plasterer.
She needs to buy 6 bags of plaster.

Georgie finds these prices.

| Number of bags | Price per bag |
|---|---|
| 1 – 4 | £4.97 |
| 5 or more | £4.48 |

VAT of 20% is **not** included in these prices.

(a) How much does Georgie pay in total for 6 bags of plaster including VAT?

**(3)**

Use the box below to show clearly how you get your answer.

Georgie charges £15 per hour to plaster.
She knows it takes her 20 mins to plaster an area of $1 \, m^2$

Georgie needs to plaster an area of $58.5 \, m^2$

(b) How much should Georgie charge to plaster an area of $58.5 \, m^2$?
Show a check of your working. **(4)**

Use the box below to show clearly how you get your answer.
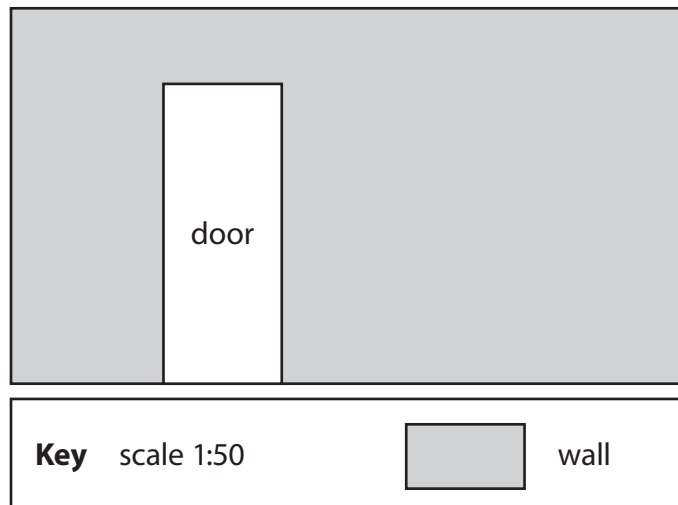
Use the box below to show your check.

☑

**(Total for Question 1 is 7 marks)**

*Turn over* ▶

P 5 7 0 8 9 A 0 3 2 0

**2** Georgie is going to plaster this wall.

Here is a **scale** diagram of the wall.



door

**Key**  scale 1:50    wall

The door is 2 m by 80 cm.

Plaster comes in 7.5 kg bags.
7.5 kg of plaster covers 3 m² of wall.

Georgie thinks 4 bags of plaster will be enough to plaster the wall.

Is Georgie correct?
Show why you think this. **(6)**

Use the box below to show clearly how you get your answer.

*P57089A0420*

**(Total for Question 2 is 6 marks)**

**3** Georgie needs to paint the wall with a fixing mixture.
She mixes glue and water in the ratio 3:1 to make the mixture.

Georgie needs 5 litres of the mixture.
She has 3.5 litres of glue.

Does Georgie have enough glue to make 5 litres of the mixture?

**(3)**

Use the box below to show clearly how you get your answer.

**(Total for Question 3 is 3 marks)**

**SECTION B: Cooking**

**Answer all questions in this section.**

**Write your answers in the spaces provided.**

**4** Barney is cooking a chicken.
He has these instructions.

- cook the chicken at 180°C for 20 minutes per 500 g plus 15 minutes
- rest the chicken for 10 minutes before serving

The chicken weighs 1.8 kg.

Barney wants to serve the chicken at 2 pm.

(a) What is the latest time Barney should start cooking the chicken?

(5)

Use the box below to show clearly how you get your answer.

Barney has a gas oven.
He sets the temperature of the oven by using gas marks.

Barney uses this formula to convert 180°C to the gas mark required.

$$G = \frac{(T - 121)}{14}$$

G is gas mark

T is temperature in °C

Barney thinks gas mark 6 is the same as 180°C.

(b) Is Barney correct?
Show why you think this.
(2)

Use the box below to show clearly how you get your answer.

**(Total for Question 4 is 7 marks)**

**5** Barney is going to bake a cake.

He uses 250 grams of flour for the cake.

He adds 14 grams of baking powder for each 150 grams of flour.

(a) How much baking powder does Barney add to 250 grams of flour?
Give your answer correct to the nearest gram.

**(3)**

Use the box below to show clearly how you get your answer.

Barney needs 12 ounces of raisins for his cake.
He uses this conversion graph.
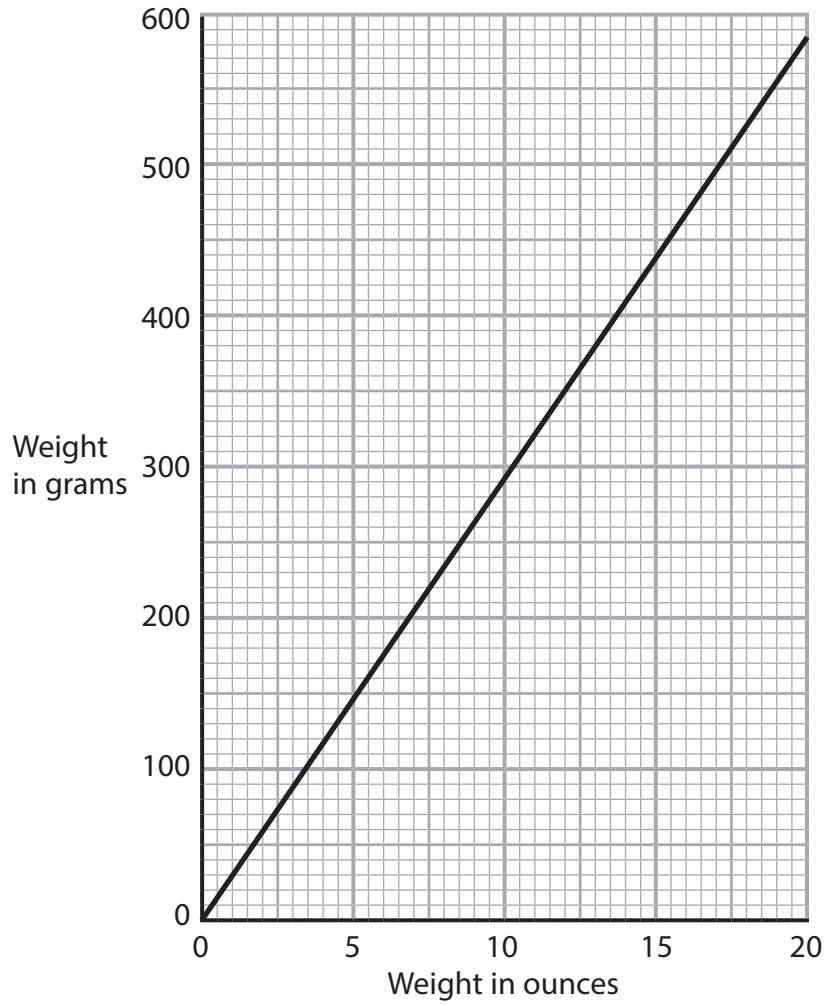


(b) Use the graph to convert 12 ounces into grams.

**(2)**

Use the box below to show your answer.

Barney has 2 200 cm³ of cake mixture.
He needs to put the cake mixture into a tin.

Barney has two cake tins.

Tin A has a rectangular base 21 cm by 15 cm.
The height of this tin is 7 cm.

Tin B has a square base of side length 23 cm.
The height of this tin is 5 cm.

(c)  Which tin should Barney use?
Give a reason for your choice.

**(4)**

Use the box below to show clearly how you get your answer.

**(Total for Question 5 is 9 marks)**

**SECTION C: The driving school**

**Answer all questions in this section.**

**Write your answers in the spaces provided.**

**6** Jai is a driving instructor.
He thinks he travels an average of 500 miles each week.

Jai records these figures for 5 weeks.

| week | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **number of miles** | 478 | 524 | 511 | 496 | 473 |

Does Jai travel an average of 500 miles each week in these 5 weeks?
Show a check of your working.

**(3)**

Use the box below to show clearly how you get your answer.

Use the box below to show your check.

☑

**(Total for Question 6 is 3 marks)**

**7** Jai wants to find out which local driving school offers the cheapest price for 15 lessons.

He finds this information.

### Safety Drive

**£23 per lesson**

Special offer -
Pay for 10 lessons get your next lesson free

### Pass First

**£25 per lesson**

Special offer -
Pay for 10 or more lessons and get 17% off the total price

### Lo Cost

**£22 per lesson**

Jai thinks Pass First has the cheapest price for 15 lessons.

Is Jai correct?
Show why you think this.

**(5)**

Use the box below to show clearly how you get your answer.

**(Total for Question 7 is 5 marks)**

**8** Jai has to drive from Oxford to Aberdeen.
He finds this information about the distances between cities.

Aberdeen

| | | | | | | |
|---|---|---|---|---|---|---|
| 431 | Birmingham | | | | | |
| 231 | 199 | Carlisle | | | | |
| 147 | 296 | 96 | Glasgow | | | |
| 544 | 120 | 313 | 409 | London | | |
| 355 | 89 | 123 | 219 | 202 | Manchester | |
| 503 | 68 | 271 | 367 | 56 | 161 | Oxford |

Distances are in miles

Jai knows
• his car covers a distance of 44 miles per gallon of fuel
• his car fuel tank holds a maximum of 50 litres of fuel
• 1 litre is 0.22 gallon.

> Can Jai drive from Oxford to Aberdeen using only one full tank of fuel?
>
> (4)

Use the box below to show clearly how you get your answer.

**(Total for Question 8 is 4 marks)**

**9** Jai wants to compare the fuel costs of an electric car with his petrol car.

He knows
- his petrol car covers 44 miles per gallon
- 1 gallon of petrol costs 549 pence.

He finds the following information about an electric car
- it covers 3.2 miles per kilowatt of electricity
- 1 kilowatt of electricity costs 9.7 pence.

Jai thinks the cost of fuel for the electric car is $\frac{1}{4}$ the cost of fuel for his petrol car.

Is Jai correct?
Show why you think this. **(4)**

Use the box below to show clearly how you get your answer.

**(Total for Question 9 is 4 marks)**

**TOTAL FOR PAPER IS 48 MARKS**

**BLANK PAGE**

**BLANK PAGE**