Please check the examination details below before entering your candidate information

Candidate surname		Other names

Pearson Edexcel
Functional Skills

Centre Number	Candidate Number

Past Paper 4

Time: 25 minutes

Paper Reference **PMAT2/N04**

Mathematics
Level 2
Section A (Non-Calculator)

You must have:
Pen, HB pencil, eraser, ruler graduated in cm and mm, protractor, pair of compasses. Tracing paper may be used.

Total Marks

My signature confirms that I will not discuss the content of the test with anyone.

Signature:_____

Instructions
- Use **black** ink or 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.
- Write your final answers in the boxes provided.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You **must** show clearly how you get your answers in the spaces provided. Marks will be awarded for your working out.
- Check your working and answers at each stage.
- Diagram are **not** accurately drawn, unless otherwise indicated.
- **Calculators may not be used**.
- Take the value of π to be 3.14

Information
- The total mark for this section is 16.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- This sign ☑ shows where marks will be awarded for showing your checks.

Advice
- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶
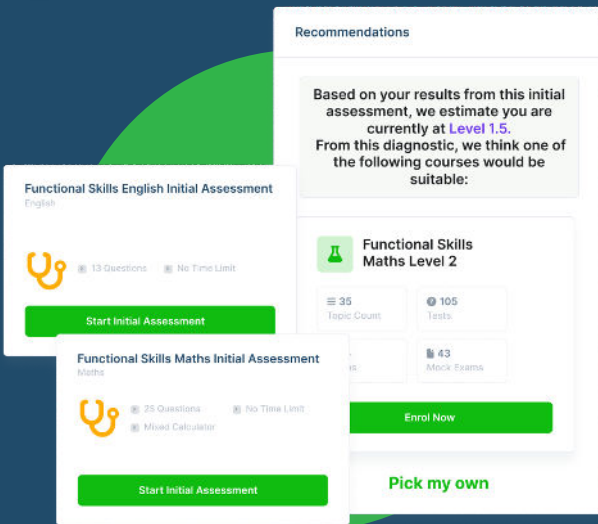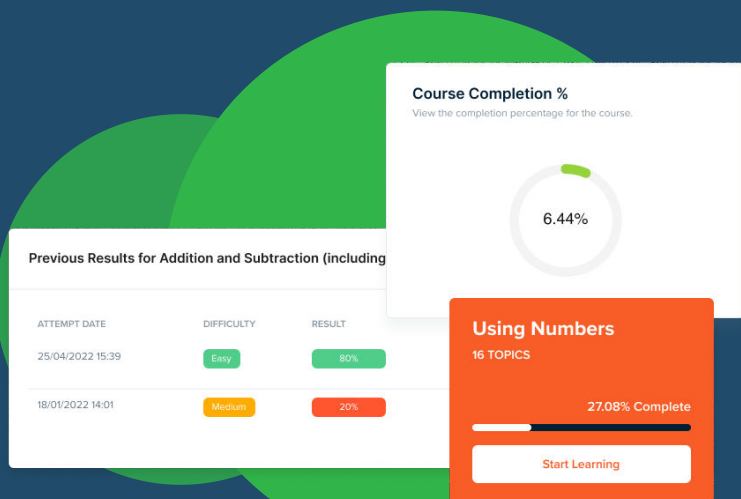
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Pearson

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PASS FUNCTIONAL SKILLS

Recommendations

Based on your results from this initial assessment, we estimate you are currently at Level 1.5.
From this diagnostic, we think one of the following courses would be suitable:

Functional Skills Maths Level 2

- 35 Topic Count
- 105 Tests
- 43 Mock Exams

Enrol Now

Pick my own

Functional Skills English Initial Assessment
English
- 13 Questions
- No Time Limit

Start Initial Assessment

Functional Skills Maths Initial Assessment
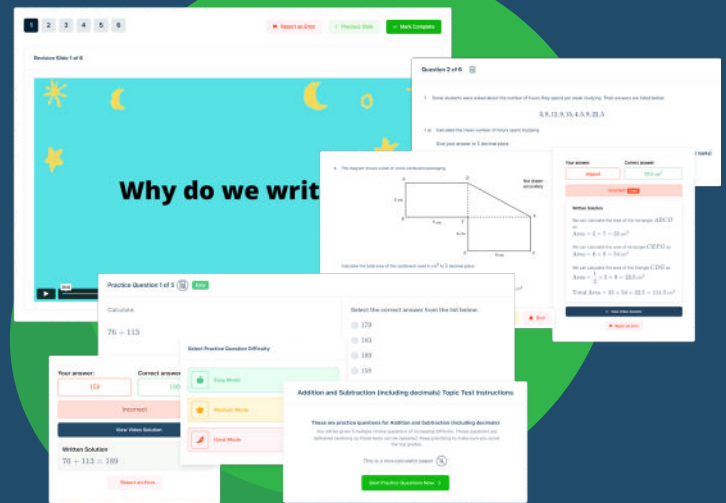Maths
- 25 Questions
- No Time Limit
- Mixed Calculator

Start Initial Assessment

✅ Your answers are analysed to determine your Current Level

✅ Suggested courses for you to enrol on based on your calculated level

✅ Always know the level you are currently working at

✅ Determine when you are ready to sit your exam

✅ Explainer videos on every topic

✅ Quick-fire style mutiple choice questions

✅ Test your knowledge with exam-style questions

✅ Written solutions for all questions

Course Completion %
View the completion percentage for the course.

6.44%

Previous Results for Addition and Subtraction (including

ATTEMPT DATE	DIFFICULTY	RESULT
25/04/2022 15:39	Easy	80%
18/01/2022 14:01	Medium	20%

Using Numbers
16 TOPICS

27.08% Complete

Start Learning

✅ See your progress through as you progress through each topic area

✅ Get your average scores for practice questions, topic tests and mock exams

✅ View all practice question, topic test and mock exam attempts over time

✅ View historical attempts to analyse your progress over time

Or visit
passfunctionalskills.co.uk

SECTION A

Answer ALL questions. Write your answers in the spaces provided.

1   Shannon works in a mobile phone shop.

This week Shannon makes

- 19 pay as you go phone sales
- 57 SIM card with handset contract sales.

The remaining sales were SIM card only contracts.

Shannon made a total of 114 sales during this week.

What fraction of the sales made by Shannon this week were SIM card only contracts?
Write your fraction in its simplest form.

(3)

$$\begin{array}{r} 57 \\ +19 \\ \hline 76 \\ 1 \end{array}$$

$$\begin{array}{r} {}^{0}\overset{10}{1}\overset{1}{1}4 \\ -76 \\ \hline 38 \end{array}$$

$$\frac{38}{114} = \frac{19}{57} = \frac{1}{3}$$

$\frac{1}{3}$

(Total for Question 1 is 3 marks)

P 6 7 2 8 3 A 0 3 0 8

2 Grace and James share £72 in the ratio 4:5

(a) Work out the amount of money that James gets.
You **must** show your working.

(2)

$$4 + 5 = 9$$

$$72 \div 9 = 8$$

$$8 \times 5 = 40$$

£ 40

☑ (b) Show a check of your working.

(1)

$$40 \div 5 = 8$$

(Total for Question 2 is 3 marks)

4

3 Brian collects loyalty points at the supermarket.
The total value of the loyalty points he has collected is £17.50

Brian has this information.

> Exchange loyalty points for
> travel vouchers and get
> 3 times the value

Travel vouchers can be used to pay for ferry tickets.

Brian wants to book 2 ferry tickets.
The ferry tickets cost £33.25 and £29

Brian will exchange all his loyalty points for travel vouchers.
He will use all the travel vouchers towards the cost of the ferry tickets.

Brian will pay for the rest of the cost of the ferry tickets with his bank card.

How much will Brian pay with his bank card?

(4)

$$\begin{array}{r} 3 \\ \times\ 17.50 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \\ 1.50 \\ 21.00 \\ 30.00 \\ \hline 52.50 \end{array}$$

$$\begin{array}{r} 33.25 \\ +\ 29.00 \\ \hline 62.25 \\ 1 \end{array}$$

$$\begin{array}{r} ^5\ ^{11} \\ \cancel{6}\cancel{7}.25 \\ -\ 52.50 \\ \hline 09.75 \end{array}$$

£   9.75

(Total for Question 3 is 4 marks)

P 6 7 2 8 3 A 0 5 0 8

4   Zia makes and sells candles.
    She wants to make candles in the shape of a triangular prism.

    Zia has this sketch of the triangular face and the candle.

    10 cm

    cross
    section

    8 cm

    6 cm
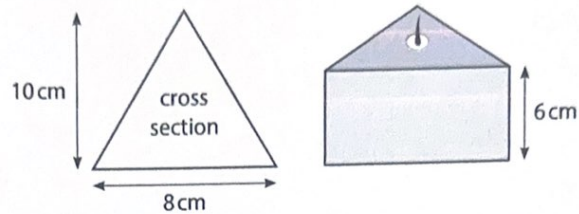
    Zia will melt wax to make the candles.
    She knows that

    - each 1 kg of solid wax makes 1.2 litres of melted wax
    - 1 litre = 1000 cm³
    - the volume of a prism = area of cross section × height

    Zia has a 5 kg bag of solid wax.
    She thinks that she can make at least 20 candles with this bag of solid wax.

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

    Cross Section area = $\frac{1}{2} \times 10 \times 8 = 40\ cm^2$

    Volume $= 40 \times 6 = 240\ cm^3 = 0.24$ litres

    $5 \times 1.2 = 6$ litres of wax

    $6 \div 0.24 = 25$ candles

    Zia is correct she can make 25 candles

P 6 7 2 8 3 A 0 6 0 8

(Total for Question 4 is 6 marks)

TOTAL FOR SECTION A IS 16 MARKS

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**Pearson Edexcel
Functional Skills**

Centre Number

Candidate Number

Past Paper 4

Time: 1 hour 30 minutes

Paper Reference **PMAT2/C04**

Mathematics
Level 2
Section B (Calculator)

Total Marks

You must have:
Pen, HB pencil, eraser, ruler graduated in cm and mm, protractor, pair of compasses. Tracing paper may be used.

My signature confirms that I will not discuss the content of the test with anyone.

Signature:_____

Instructions
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- Check your working and answers at each stage.
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- **Calculators may be used**.
- If your calculator does not have a π button take the value of π to be 3.14

Information
- The total mark for this section is 48.
- The total mark for this paper is 64.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- This sign ☑ shows where marks will be awarded for showing your checks.

Advice
- Read each question carefully before you start to answer it.
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Turn over ▶

Pearson

SECTION B

Answer ALL questions. Write your answers in the spaces provided.

1 Johan is cooking using an old recipe.
The recipe says to preheat the oven to a temperature of 350 °F.

The oven Johan uses is marked in centigrade (°C).
He finds this formula to change from °F to °C.

$$C = \frac{5(F - 32)}{9}$$

C = temperature °C
F = temperature °F

Johan sets the oven temperature to 190 °C.

Has Johan set the oven to the correct temperature for this recipe?

(3)

$$C = \frac{5(350 - 32)}{9} = \frac{5 \times 318}{9}$$

$$= 1590 \div 9 = 176.67 °C$$

No, Johan has set it too high, it needs to be at 176.67 °C

(Total for Question 1 is 3 marks)

2

P 6 7 2 8 4 A 0 2 2 0

2 Here is the net of a 3D object.
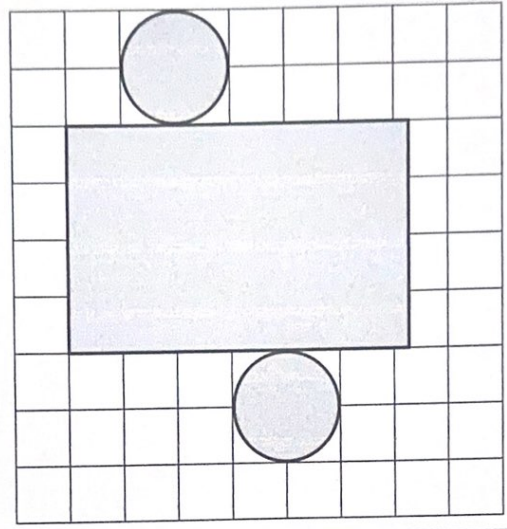
Key 1 cm on the grid represents 5 cm on the 3D object

Draw a sketch of the 3D object.
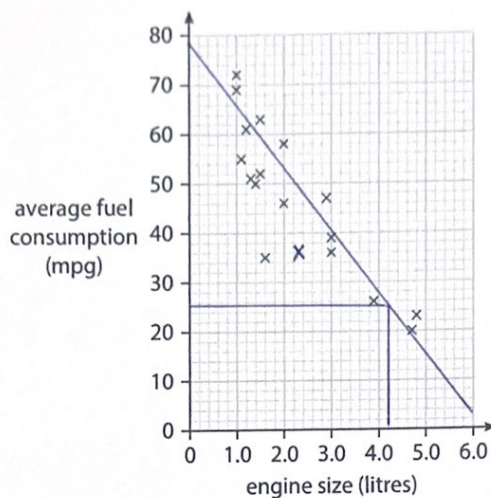Remember to label the dimensions on your sketch.

(3)

10 cm

20cm

(Total for Question 2 is 3 marks)

P 6 7 2 8 4 A 0 3 2 0

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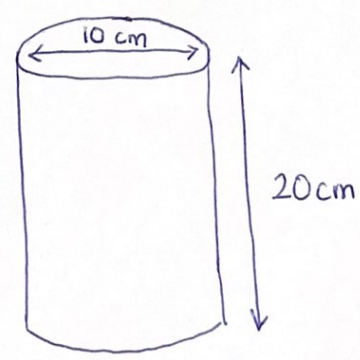
3   The scatter diagram shows some information about the engine size in litres
    and average fuel consumption in miles per gallon (mpg) of some cars.

average fuel
consumption
(mpg)

Here is the information for another car

- engine size 2.3 litres, average fuel consumption 36 mpg.

(a) Plot this information on the scatter graph.

(1)

(b) Draw a line of best fit on the scatter graph.

(1)

Mikael buys a car with an engine size of 4.2 litres.

(c) Use your line of best fit to estimate the average fuel consumption of this car.

(1)

25   mpg

(d) What type of correlation is shown in this scatter diagram?
    Tick [✔] a box to show your answer.

(1)

unlikely   negative   even   neutral   positive   likely

☐   ✓   ☐   ☐   ☐   ☐

(Total for Question 3 is 4 marks)

P 6 7 2 8 4 A 0 4 2 0

4

(a) Work out $\dfrac{(3^3 - 4^2) + 7}{2.5}$

(1)

$$\dfrac{(3^3 - 4^2) + 7}{2.5} = \dfrac{27 - 16 + 7}{2.5} = 7.2$$

7.2

(b) Write the following values in order of size.
Start with the smallest value.

| 0.5 | $\dfrac{5}{9}$ | 0.53 | $\dfrac{4}{7}$ | 47% |

(2)

0.55..   0.57..   0.47

$$47\%,\ 0.5,\ 0.53,\ {}^5/9,\ 4/7$$

(Total for Question 4 is 3 marks)

5   Misbah is a midwife at her local hospital.
    She is writing a report about changes in the average weight of a baby at birth.

    Misbah has this information about birth weights in 2018 at the hospital.

Weight (kg)	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7
Frequency	26	48	74	113	167	132	109	92	36

Misbah can use this graph to change between kg and lb.
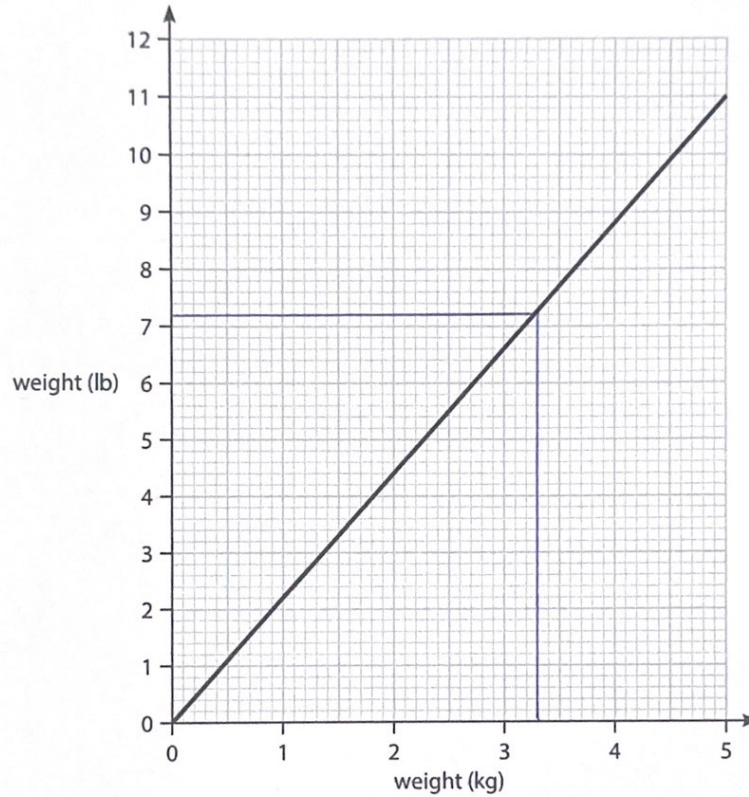
weight (lb)

weight (kg)

Misbah wants to write about the percentage change in the modal weight of a baby from 1998 to 2018

She finds out that the **modal** weight of a baby in 1998 was 7.7 lb

What is the percentage change in the modal weight of a baby from 1998 to 2018?
Write your answer to the nearest whole number.

(5)

Model weight in 2018 = 3·3 Kg

3·3 Kg = 7·2 lbs

$$\frac{7·7 - 7·2}{7·7} \times 100 = 6·493... \%$$

$$\simeq 6\%$$
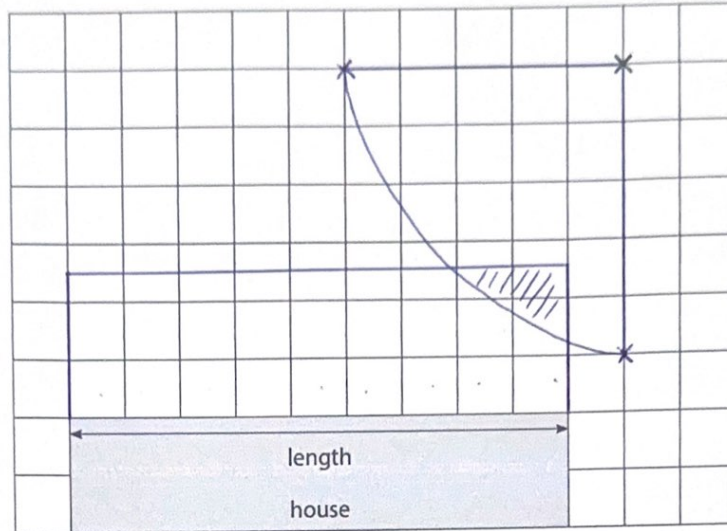
6	%

(Total for Question 5 is 5 marks)

P 6 7 2 8 4 A 0 7 2 0

6 Kasim wants an extension built onto his house.

The diagram shows part of the house and the centre of a tree.

length

house

Key 1 cm on the grid represents ....4......... m on the ground
     X represents centre of tree

The length of the house is 36 m.

(a) Complete the key. $36 \div 9 = 4$

(1)

The extension will be in the shape of a rectangle with width of 10 m and the same length as the house.

The roots of the tree grow in a circular shape.
The roots grow to a maximum length of 20 m from the centre of the tree.

The extension will need deep foundations if built over the roots.

(b) Will the extension need deep foundations?
    Use the grid to show why you think this.

$20 \div 4 = 5$
$10 \div 4 = 2.5$

(2)

Yes, part of the extension will be over the roots

(Total for Question 6 is 3 marks)

P 6 7 2 8 4 A 0 8 2 0

7 Tess works for a drinks company.
She is told that it is better for the environment if less metal is used when making cans.

She starts to design a new can that is taller and narrower than the old can.
The new can

- is in the shape of a cylinder
- has a diameter of 52 mm
- has a height of 154 mm
- holds the same amount of drink.

Tess knows that 27 332 mm² of metal is used to make the top, the side and
the bottom of each old can.

She thinks that her design will use less metal to make the top, the side and
the bottom of each new can.

Is Tess correct?
Show why you think this.

(4)

52 mm

154 mm

Surface area of top/bottom
$= 3.14 \times \left(\frac{52}{2}\right)^2 = 2122.64 \text{ mm}^2$

curved surface area $= 3.14 \times 52 \times 154 = 25145.12 \text{ mm}^2$

Total SA $= 2122.64 \times 2 + 25145.12 = 29390.4 \text{ mm}^2$

Tess is not correct it will use more metal
(29390.4 mm^2)

NO

(Total for Question 7 is 4 marks)

P 6 7 2 8 4 A 0 9 2 0

8 Last week 263 people passed their driving test at a test centre.

The table shows information about the number of driving tests these people took before passing.

Number of driving tests taken	Frequency
1	118
2	74
3	43
4	21
5 or more	7

(a) What is the probability that a person chosen at random passed their driving test on the first attempt?

(1)

$$\frac{118}{263}$$

(b) What is the probability that a person chosen at random did not pass their driving test on the first attempt?

(2)

$$\frac{263-118}{263} = \frac{145}{263}$$

$145/263$

Keely sees a car she wants to buy.
The purchase price of the car is £4200

She can pay the purchase price in full or use this payment plan.

Payment plan

Pay $\frac{2}{5}$ of purchase price today

24 monthly payments of £112.90

Keely knows that using the payment plan will cost more than paying in full.

(c) How much more will Keely pay using the payment plan?

(3)

$\frac{2}{5}$ of 4200 = (4200 ÷ 5) × 2 = £1680

24 × 112·90 = £2709·60

2709·6 + 1680 = £4389·60

4389·60 − 4200 = £189·60

£ 189·60

(Total for Question 8 is 6 marks)

P 6 7 2 8 4 A 0 1 1 2 0

9 Ryan is doing a project about sugar at school.
He wants to compare the amount of sugar in grapes with the amount of sugar in cookie dough.

Ryan finds this information

- grapes weighing 92 g contain 15 g of sugar
- cookie dough weighing 610 g contains 110 g of sugar.

Ryan thinks that there is a higher percentage of sugar in the cookie dough than in the grapes.

Is Ryan correct?
Show why you think this.

(3)

$$\frac{15}{92} \times 100 = 16.30\%$$

$$\frac{110}{610} \times 100 = 18.03\%$$

$$18.03 > 16.30$$

Ryan is correct.

(Total for Question 9 is 3 marks)

10 Here is an isosceles triangle.

It has a

- base length of 13.9 cm
- perimeter of 38.2 cm.

13.9 cm
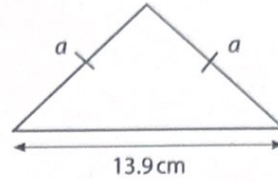
(a) Work out the length of side a on the triangle.

(2)

$$2a + 13.9 = 38.2$$

$$2a = 38.2 - 13.9 = 24.3$$

$$a = \frac{24.3}{2} = 12.15$$

$a =$ **12.15**   cm

Here are some calculations.

$40 \div 14$	$40 - 10 - 10$	14×38	$\frac{40 - 14}{2}$ ✓

$38 - 14 \times 2$	$\frac{40 + 14}{2}$	$38 - 14 - 14$

☑ (b) Which calculation is suitable as a check using estimation?
Tick [✔] the calculation to show your answer.

(1)

(Total for Question 10 is 3 marks)

P 6 7 2 8 4 A 0 1 3 2 0

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11

(a) Write 6.8% as a decimal.

(1)

0·068

Jess invests £3800 into a savings account for 3 years.

She will not put any extra money into the account.
She will not take any money out of the account.

The investment will earn 2.4% compound interest per year.

(b) Work out the total amount of interest earned after 3 years.

(4)

$$3800 \times 1.024^3 = 4080.22$$

$$4080.22 - 3800 = £280.22$$

£ 280·22

(Total for Question 11 is 5 marks)

12 Andy works at a medical centre.
He reads a news report about a shortage of doctors in some parts of the UK.

The report states the following figures for the UK

- the average number of patients per doctor is 1734
- the range is 826 patients per doctor.

The table shows some information about the number of patients for each doctor at the medical centre.

Doctor	Number of patients
A	1348
B	1847
C	1760
D	1562
E	1240
F	1703

Andy needs to write a report to compare the figures for the medical centre with the figures for the UK.

He needs to comment on

- a comparison of the average number of patients per doctor
- the consistency of the number of patients per doctor.

Write comments for the report.
Remember to use calculations and figures to support your comments.

(6)

mean number $= (1348 + 1847 + 1760 + 1562 + 1240$
of patients $\qquad + 1703) \div 6 = 1576.67$
$$\simeq 1577$$

range $= 1847 - 1240 = \underline{607}$

The average number of patients per doctor is lower than the national average and the range is smaller so the results are more consistent.

P 6 7 2 8 4 A 0 1 6 2 0

see previous page.

(Total for Question 12 is 6 marks)

TOTAL FOR SECTION B IS 48 MARKS
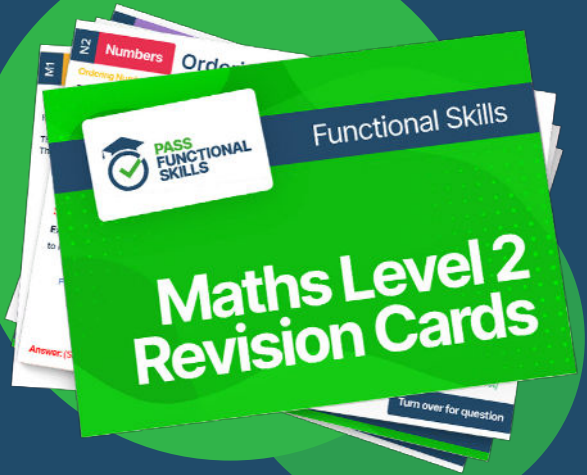**TOTAL FOR PAPER IS 64 MARKS**

P 6 7 2 8 4 A 0 1 7 2 0

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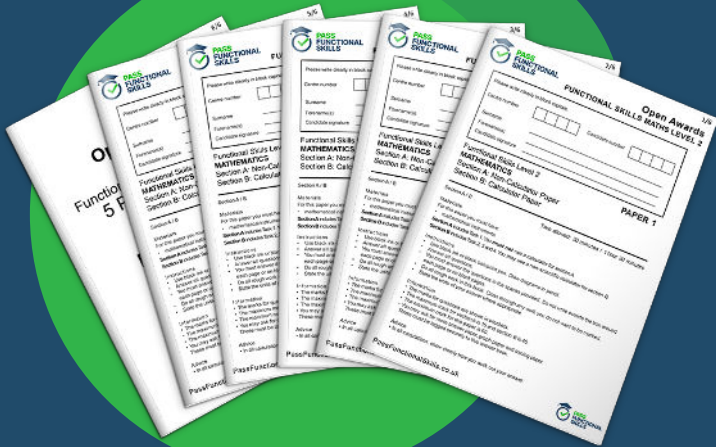
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