

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 5\*\*\***

Time: 25 minutes

Paper Reference **PMAT2/N05**

**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  $\pi$  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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# FUNCTIONAL SKILLS ONLINE COURSES

- ✓ 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

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

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

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

- ✓ Explainer videos on every topic
- ✓ Quick-fire style multiple choice questions
- ✓ Test your knowledge with exam-style questions
- ✓ Written solutions for all questions

Why do we write

Practice Question 1 of 5  
Calculation  
 $76 + 113 = 189$

Question 2 of 5  
Select the correct answer from the list below:  
129  
183  
189  
154

Written Solution  
 $76 + 113 = 189$

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](https://passfunctionalskills.co.uk)

## SECTION A

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

- 1 Gareth sells hot drinks.  
He sells cups of tea, cups of coffee and cups of hot chocolate.

Of all the hot drinks he sold last week

- $\frac{2}{5}$  were cups of tea
- $\frac{1}{3}$  were cups of coffee.

What fraction of all cups of hot drinks sold were cups of hot chocolate?

(3)

$$\frac{2}{5} + \frac{1}{3} = \frac{6}{15} + \frac{5}{15}$$
$$= \frac{11}{15}$$

$$\text{hot chocolate} = 1 - \frac{11}{15}$$
$$= \frac{15}{15} - \frac{11}{15}$$
$$= \frac{4}{15}$$

$$\frac{\boxed{4}}{\boxed{15}}$$

(Total for Question 1 is 3 marks)



2

(a) Work out  $13.4 \times 5.2$ 

(2)

$$\begin{array}{r}
 134 \\
 \times 52 \\
 \hline
 268 \\
 6700 \\
 \hline
 6968
 \end{array}$$

need two digits after decimal point so 69.68

69.68



(b) Use estimation to show a check of your working.

(1)

$$13 \times 5 = 65$$

(Total for Question 2 is 3 marks)

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DO NOT WRITE IN THIS AREA



- 3 Mitch works in a fitness centre.  
He gives one raffle ticket to each of 1000 people that attend the fitness centre.

Mitch starts to complete this two-way table to show information about the people he gives the raffle tickets to.

|             |             | favourite class |      |        | total |
|-------------|-------------|-----------------|------|--------|-------|
|             |             | spin            | yoga | cardio |       |
| age (years) | 18 to 24    | 85              | 92   | 145    | 322   |
|             | 25 to 49    | 107             | 119  | 134    | 360   |
|             | 50 and over | 38              | 170  | 110    | 318   |
| total       |             | 230             | 381  | 389    | 1000  |

- (a) Complete the two-way table for Mitch.

(2)

Mitch selects a raffle ticket at random.

- (b) What is the probability that the ticket he selects belongs to a person aged under 50 whose favourite class is cardio?

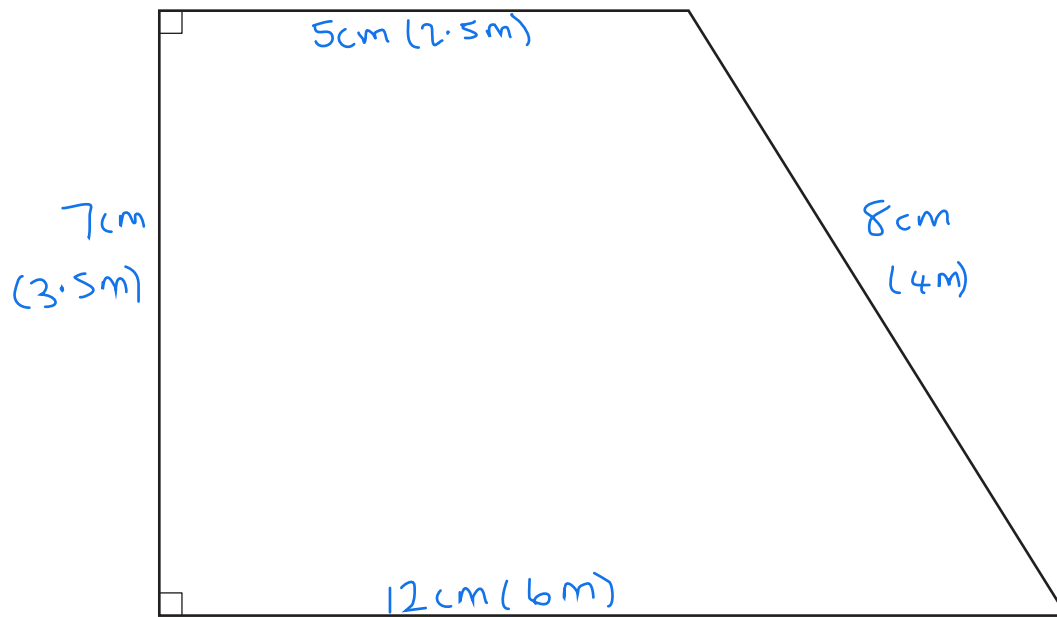
(2)

$$\frac{145 + 134}{1000} = \frac{279}{1000}$$

(Total for Question 3 is 4 marks)



- 4 Dave is going to paint a wall.  
Here is a scale diagram of the wall.



Scale 1 cm represents 0.5 m

Dave will paint this wall twice.  
He thinks the total area that he needs to paint is greater than  $30\text{ m}^2$

Is Dave correct?  
You **must** show all your working.

(6)

$\times 0.5$   
 $1\text{ cm} \rightarrow 0.5\text{ m}$   
 $8\text{ cm} \rightarrow 4\text{ m}$   
 $5\text{ cm} \rightarrow 2.5\text{ m}$   
 $7\text{ cm} \rightarrow 3.5\text{ m}$   
 $12\text{ cm} \rightarrow 6\text{ m}$

$$\text{area} = \frac{2.5 + 6}{2} \times 3.5$$

$$= 4.25 \times 3.5$$

$$\begin{array}{r} \phantom{+} 425 \\ \times \phantom{+} 35 \\ \hline \phantom{+} 2125 \\ + \phantom{+} 12750 \\ \hline 14875 \end{array}$$

$$= 14.875\text{ m}^2 \text{ (in real life)}$$



paints wall twice so  $14.875 \times 2$   
 $= 29.75 \text{ m}^2$

$$\begin{array}{r} 14875 \\ \times \quad 2 \\ \hline 29750 \\ \text{' ' ' } \end{array}$$

no, area to paint  
is not greater than  $30 \text{ m}^2$

(Total for Question 4 is 6 marks)

**TOTAL FOR SECTION A IS 16 MARKS**



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Functional Skills**

Centre Number

Candidate Number

**\*\*\*Past Paper 5\*\*\***

Time: 1 hour 30 minutes

Paper Reference **PMAT2/C05**

**Mathematics**

**Level 2**

**Section B (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: \_\_\_\_\_

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- Diagram are **not** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a  $\pi$  button take the value of  $\pi$  to be 3.14

**Information**

- The total mark for this section is 48.
- The total mark for this paper is 64.
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**Advice**

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

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SECTION B

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

1 Here is a set of data.

15 10 16 8 14 0 13 8 15 8

(a) Find the median.

(2)

0 8 8 8 10 13 14 15 15 16

$$\begin{aligned} \text{median} &= \frac{10+13}{2} \\ &= \frac{23}{2} \\ &= 11.5 \end{aligned}$$

11.5

(b) Find the mode.

(1)

most common = 8

8

(Total for Question 1 is 3 marks)

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- 2 Last year Jim bought 15 prizes for work.  
The prizes cost £27 each.

This year Jim will buy 18 prizes.  
He will spend the same total amount of money as he spent last year on the prizes.

Each of the 18 prizes must cost the same amount of money.

Work out the cost of each prize this year.

(3)

$$\begin{aligned} \text{total amount} &= 15 \times 27 \\ &= \pounds 405 \text{ to spend} \end{aligned}$$

$$\begin{aligned} \text{each prize} &= 405 \div 18 \\ &= \pounds 22.50 \end{aligned}$$

£ 22.50

(Total for Question 2 is 3 marks)



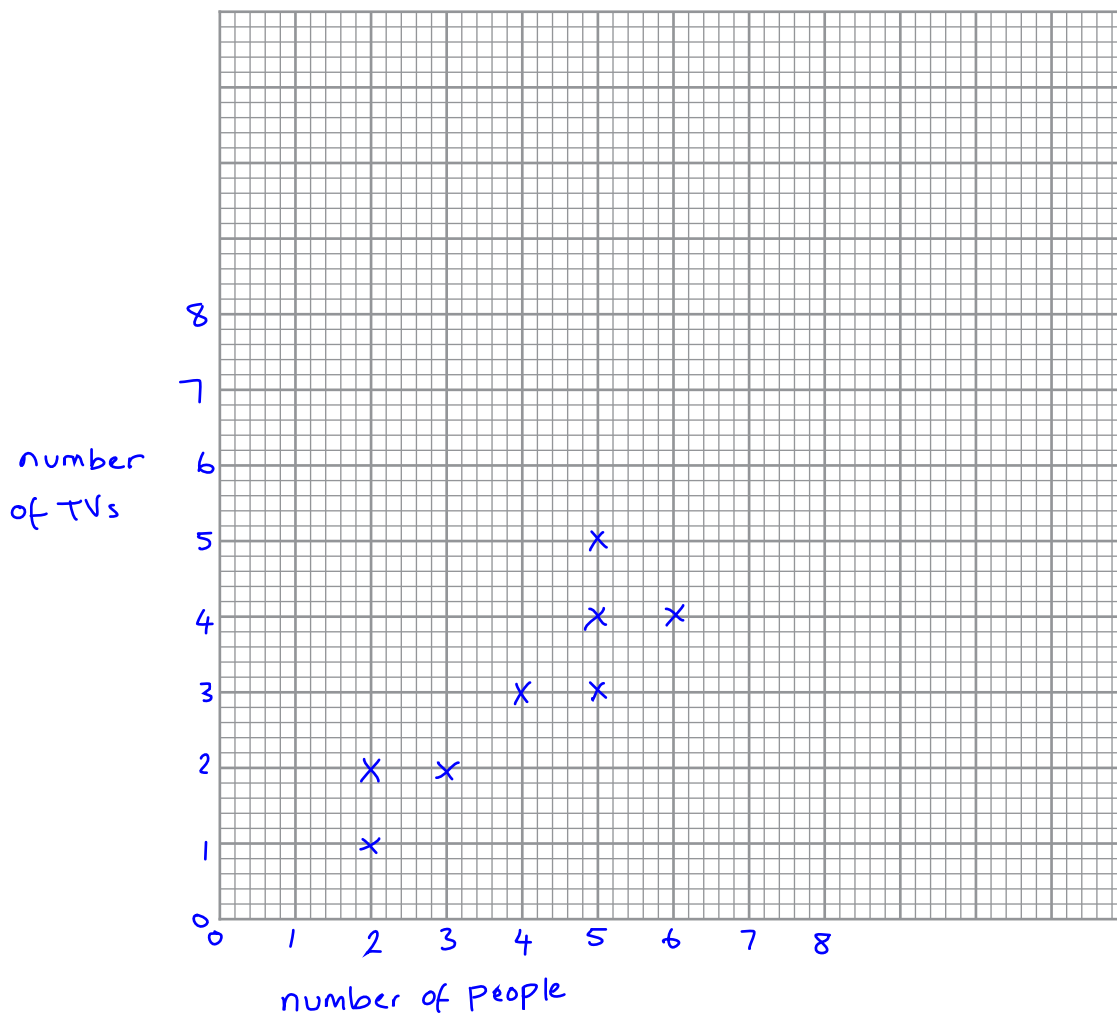
- 3 Steve is writing a report about TV viewing. He has the following information.

|  |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|
| <b>Number of people in the household</b> | 3 | 5 | 5 | 6 | 5 | 2 | 4 | 2 |
| <b>Number of TVs in the household</b>    | 2 | 3 | 4 | 4 | 5 | 1 | 3 | 2 |

Steve thinks there is a relationship between the number of people and the number of TVs in a household.

- (a) Draw a suitable diagram for Steve.

(3)



- (b) Describe the relationship between the number of people and the number of TVs in a household.

positive correlation

(1)

(Total for Question 3 is 4 marks)



- 4 Karen invests £2 500 for 3 years.

The investment earns 1.7% compound interest per year.

$$\begin{aligned} 100\% + 1.7\% \\ = 101.7\% \\ = 1.017 \end{aligned}$$

Work out the value of the investment at the end of 3 years.

(3)

$$\begin{aligned} 2500 \times 1.017 \times 1.017 \times 1.017 \\ = £2629.68 \end{aligned}$$

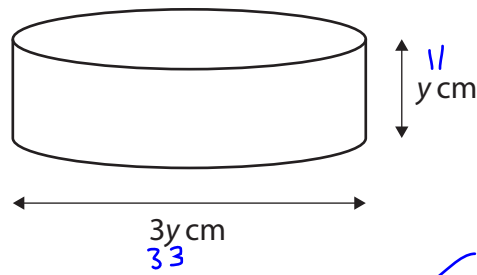
£ 2629.68

(Total for Question 4 is 3 marks)



P 6 7 3 6 9 A 0 5 2 0

5 Here is a cylinder.

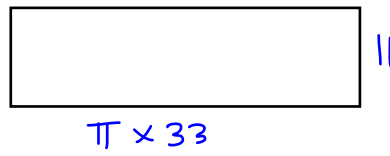


*not including top and bottom*

(a) Using  $y = 11$ , calculate the area of the curved surface of the cylinder.

(4)

*curved area;*



$$\begin{aligned} \text{area} &= \pi \times 33 \times 11 \\ &= 1140.40 \text{ cm}^2 \end{aligned}$$

$1140.40$

$\text{cm}^2$

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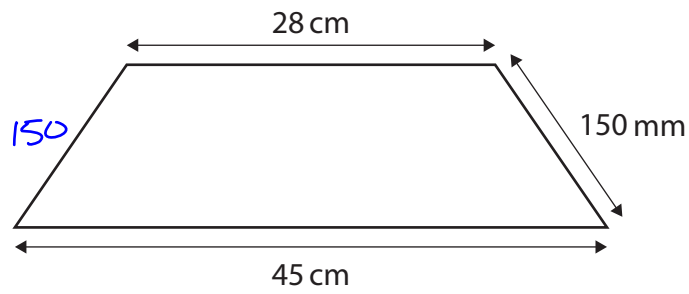
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Here is a trapezium.  
The trapezium has one line of symmetry.



(b) Choose the correct calculation to work out the perimeter of the trapezium.

(1)

- $28 \times 150$
- $28 + 150 + 45 + 150$
- $45 \times 0.15$
- $280 + 150 + 450 + 150$
- $280 \times 150$

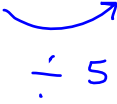
(Total for Question 5 is 5 marks)



6

(a) Write 45% as a fraction in its simplest form. (1)

$$\frac{45}{100} = \frac{9}{20}$$



|    |
|----|
| 9  |
| 20 |

(b) Calculate  $\frac{5 + 13^2}{11 - 9.5}$ 

BIDMAS

(2)

$$= \frac{5 + 169}{11 - 9.5}$$

$$= \frac{174}{1.5}$$

$$= 116$$

116

(Total for Question 6 is 3 marks)



- 7 Kate is making biscuits.  
She uses flour, butter and sugar in the ratio 5:3:2

Kate has

- 800g flour
- 550g butter.

Kate wants to make the maximum number of biscuits possible.  
She works out how much sugar she needs.

- (a) How much sugar does Kate need?  
You **must** show your working.

(3)

$$f : b : s$$

$$5 : 3 : 2$$

$$800g : 550g : ?$$

$$\begin{array}{l} \nearrow \\ 5 \text{ parts} = 800g \\ \div 5 \downarrow \quad \downarrow \div 5 \\ 1 \text{ part} = 160g \\ \downarrow \times 2 \quad \downarrow \times 2 \\ 2 \text{ parts} = 320g \end{array}$$

$$\text{sugar} = 320g$$

320 g



- (b) Use a reverse calculation to show a check of your working.

(1)

$$320 \div 2 = 160 \quad \text{so one part would be } 160g$$

(Total for Question 7 is 4 marks)





8 Lou wants to go to a gym.

She sees these two offers at the gym.

|  |
|--|
| <p><b>Offer A</b></p> <p>Gym membership</p> <p>£44 per month + £30 joining fee</p> <p>All classes included</p> |
|--|

|   |
|---|
| <p><b>Offer B</b></p> <p>Pay as you go</p> <p>£7.75 per class</p> <p>No joining fee</p> |
|---|

Lou wants to attend 2 classes each week for one year.

Lou thinks if she uses offer A she will save at least 28% on the total cost of classes compared to using offer B.

Is she correct?

Show why you think this.

offer A  
needs a year (12 months) so costs  $12 \times 44 + 30 = \pounds 558$

offer B  
needs a year (52 weeks) so costs  $2 \times 52 \times 7.75 = \pounds 806$

$$\begin{aligned} \% \text{ difference} &= \frac{806 - 558}{806} \times 100 \\ &= 30.769... \% \end{aligned}$$

↑  
Yes, more than 28%

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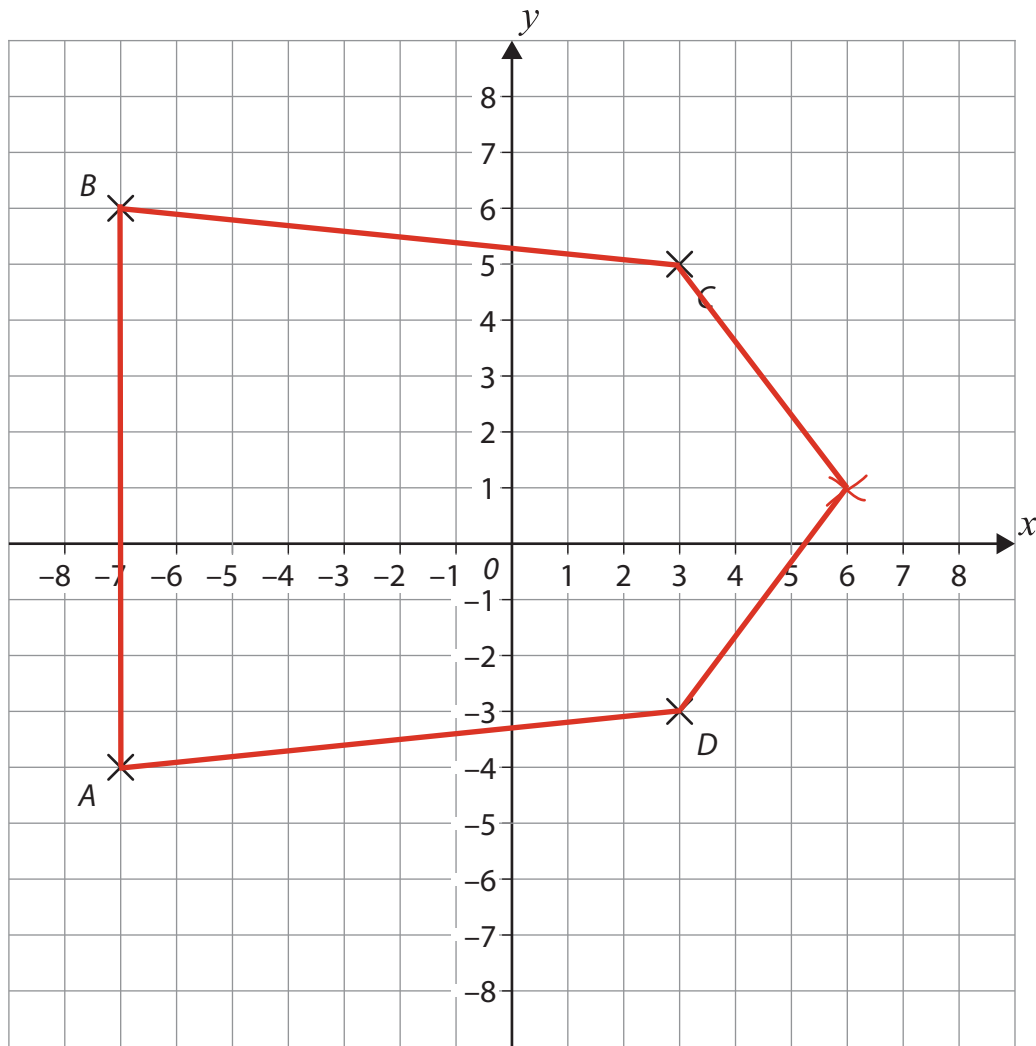
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(Total for Question 8 is 6 marks)



9 Here is a grid with points  $A$ ,  $B$ ,  $C$  and  $D$  plotted.



(a) Write down the coordinates of point  $A$ .

(1)

( -7 , 4 )

(b) On the grid, mark with a cross another point and join all five points to form a pentagon with one line of symmetry.

(2)

(Total for Question 9 is 3 marks)



- 10 Rav provides food for events.  
Last year 550 people attended an event.  
This year there will be 748 people attending the event.

Calculate the percentage increase in the number of people attending.

(3)

$$\frac{748 - 550}{550} \times 100$$

$$= \frac{198}{550} \times 100$$

$$= 36\%$$

36%

(Total for Question 10 is 3 marks)



P 6 7 3 6 9 A 0 1 3 2 0

11 Meg has a dog.

She has this information about dog food.

| Dog size                | Daily quantity of dog food in packs |
|-------------------------|-------------------------------------|
| Small (up to 12 kg)     | $\frac{1}{4}$ to $1\frac{1}{3}$     |
| Medium (13 kg to 25 kg) | $1\frac{1}{3}$ to $2\frac{1}{3}$    |
| Large (26 kg to 45 kg)  | $2\frac{1}{3}$ to $3\frac{3}{4}$    |
| Giant (46 kg to 70 kg)  | $3\frac{3}{4}$ to 5                 |

Meg knows that her dog weighs 29 lbs.

$$\begin{array}{c} \div 2.2 \\ \leftarrow \quad \rightarrow \\ 1 \text{ kg} = 2.2 \text{ lbs} \end{array}$$

Meg has 24 packs of dog food.

- (a) What is the maximum number of days she can feed her dog with the 24 packs?  
Show why you think this.

dog weighs  $29 \div 2.2 = 13.18$  kg so medium category

(3)

needs  $1\frac{1}{3}$  packs daily so will last  $24 \div 1\frac{1}{3}$  days  
 $= 24 \div \frac{4}{3}$   
 $= 18$  days

18 days



Meg needs to replace part of her garden fence to keep her dog safe.  
She needs to replace 78 feet of fencing.

Meg buys fencing measured in metres.

Meg uses 1 metre is  $\overset{\div 3.28}{\curvearrowright}$  3.28 feet.

(b) Work out how many metres of fencing Meg needs.

(2)

$$78 \div 3.28 = 23.78 \text{ metres}$$

23.78 metres

(Total for Question 11 is 5 marks)



12 Ria works in a factory making solid steel spheres.

She has this information about the number of spheres made each day for the last 100 days.

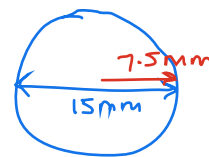
| Number of spheres | Number of days |
|-------------------|----------------|
| 210 to 212        | 4              |
| 213 to 215        | 32             |
| 216 to 218        | 53             |
| 219 to 221        | 11             |

Ria will use this information to estimate the mean number of spheres made each day.

She knows that the volume,  $v$ , of a sphere is

$$v = \frac{4\pi r^3}{3}$$

$r$  is the radius of the sphere



Each sphere has a diameter of 15 mm.

Calculate the mean volume of steel used each day to make spheres. Give your answer to the nearest thousand.

(6)

| Number of spheres | Number of days | midpoint | midpoint $\times$ freq  |
|-------------------|----------------|----------|-------------------------|
| 210 to 212        | 4              | 211      | $4 \times 211 = 844$    |
| 213 to 215        | 32             | 214      | $32 \times 214 = 6848$  |
| 216 to 218        | 53             | 217      | $53 \times 217 = 11501$ |
| 219 to 221        | 11             | 220      | $11 \times 220 = 2420$  |
| total             | 100            |          | 21613                   |

$$\begin{aligned} \text{Mean} &= 21613 \div 100 \\ &= 216.13 \text{ spheres each day} \end{aligned}$$



$$\begin{aligned}\text{Volume of each sphere} &= \frac{4 \times \pi \times 7.5^3}{3} \\ &= \frac{5298.75}{3} \\ &= 1766.25\end{aligned}$$

$$\begin{aligned}\text{Total volume of steel} &= 1766.25 \times 216.13 \\ &= 381,739.6125 \text{ mm}^3 \\ &= 382,000 \text{ mm}^3 \text{ (nearest thousand)}\end{aligned}$$

382,000 mm<sup>3</sup>

(Total for Question 12 is 6 marks)

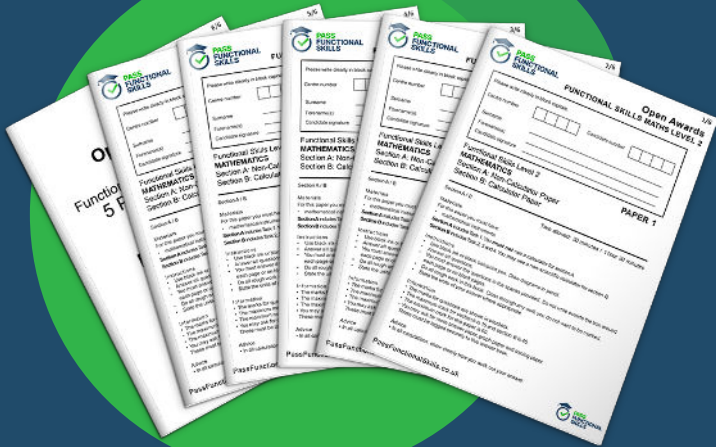
**TOTAL FOR SECTION B IS 48 MARKS**  
**TOTAL FOR PAPER IS 64 MARKS**



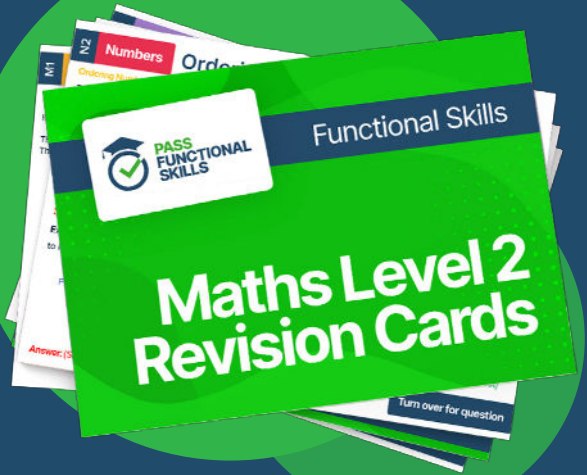




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