**Pearson Edexcel
Functional Skills**

Centre Number

Candidate Number

Set 7

Time: 25 minutes

Paper Reference **PMAT2/N07**

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

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.
- Diagrams 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 ▶

P 6 8 4 6 6 A 0 1 0 8

Pearson

PASS FUNCTIONAL SKILLS

FUNCTIONAL SKILLS ONLINE COURSES

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

Why do we writ

Practice Question 1 of 5
Calculate
76 ÷ 113

Select the correct answer from the list below:
○ 179
○ 183
○ 189
○ 159

Select Practice Question Difficulty
Easy Mode
Medium Mode
Hard Mode

Your answer: Correct answer:
154
Incorrect

View Video Solution

Written Solution
76 ÷ 113 = 189

Addition and Subtraction (including decimals) Topic Test Instructions

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

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

1 Here is some data.

146   97   109   97   141   146   103   97   94   94

(a) Find the mode of this data.

(1)

most common

97

(b) Work out 17.456 – 6.072
Show your working.

(2)

$$1\ 7\ .\ \overset{3}{\cancel{4}}\ {}^{1}5\ 6$$
$$-\quad 6\ .\ 0\ 7\ 2$$
$$\overline{\ 1\ 1\ .\ 3\ 8\ 4}$$

11·384

(Total for Question 1 is 3 marks)

2 Work out $2\frac{5}{6} + 9\frac{1}{3}$

Give your answer as a mixed number.
You **must** show your working.

(3)

$$2\frac{5}{6} + 9\frac{1}{3} = \frac{17}{6} + \frac{28}{3}$$

$$= \frac{17}{6} + \frac{56}{6}$$

$$= \frac{73}{6}$$

$$= 12\frac{1}{6}$$

$$12\frac{1}{6}$$

(Total for Question 2 is 3 marks)

3 Lara wants to join a cycling club.
The club website states that the average speed of club rides is 15 miles per hour.

Lara goes on a ride to work out her average speed.
She rides 60 km in 3 hours.

1 mile = 1.6 km

Lara thinks that her average speed is lower than the average speed of club rides.

(a) Is she correct?
Show why you think this.

(3)

She rides 60 km in 3 hrs
÷3 (20 km in 1 hr) ÷3

So her speed is 20 km/h

×1·6
miles ↘ km

Club speed is 15 miles per hour
= 15 × 1·6 km/h
= 24 km/h

$$15 \times 1.6 = 24.0$$

15
× 16
──
90
3
150
──
240

Yes, her average speed, 20 km/h, is
slower than the club average of 24 km/h

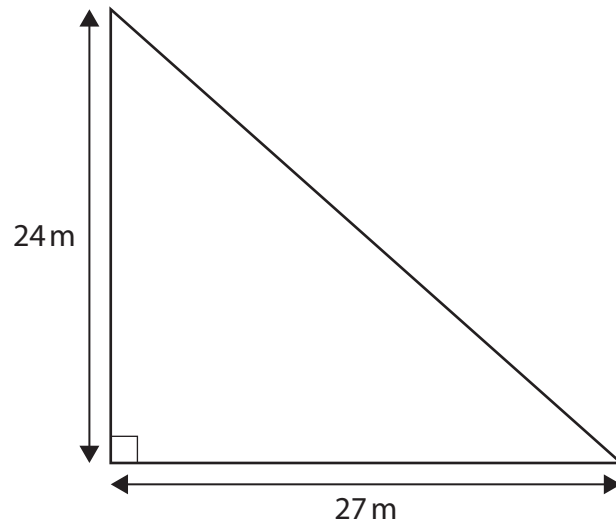☑ (b) Show a check of your answer.

(1)

15 × 2 = 30

So 15 × 1·6 = 24 seems right

(Total for Question 3 is 4 marks)

4 Bart is the manager at a building site.
He needs to lay a concrete foundation.

The diagram shows the ground space for the concrete foundation.

24 m

27 m

The depth of concrete will be 0.3 m

Concrete is delivered in concrete mixer trucks.
Each mixer truck holds 6 m³ of concrete.

How many mixer trucks of concrete does Bart need in total for the concrete foundation?

(6)

area of triangle = $\frac{24 \times 27}{2}$

$= \frac{648}{2}$

$= 324 \, m^2$

$\begin{array}{r} 24 \\ \times \ 27 \\ \hline 168 \\ + \quad 480 \\ \hline 648 \end{array}$

Volume = 324 x 0·3
= 97·2 m³ concrete needed

$\begin{array}{r} 324 \\ \times \quad 3 \\ \hline 972 \end{array}$

Will need 97·2 ÷ 6 trucks
= 16·2

6) 9 37·12 = 16·2

So 17 whole trucks

17

(Total for Question 4 is 6 marks)

TOTAL FOR SECTION A IS 16 MARKS

Pearson Edexcel
Functional Skills

Set 7

Time: 1 hour 30 minutes

Paper Reference **PMAT2/C07**

Mathematics

Level 2
Section B (Calculator)

You must have:
Pen, calculator, 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.
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- Check your working and answers at each stage.
- Diagrams are **not** accurately drawn, unless otherwise indicated.
- **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.
- Check your answers if you have time at the end.

Turn over ▶

Pearson

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

1 Here is a formula.

$$K = \frac{3(U + 7.15)}{V}$$

Work out the value of K when $U = 2.9$ and $V = 6$

(3)

$$K = \frac{3 \times (2 \cdot 9 + 7 \cdot 15)}{6}$$

$$= \frac{3 \times 10 \cdot 05}{6}$$

$$= \frac{30 \cdot 15}{6}$$

$$= 5 \cdot 025$$

5·025

(Total for Question 1 is 3 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
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DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

2 Shona and Erica are gymnasts.

Here are the scores Shona got in the last 7 competitions.

12.9	14.3	14.1	13.0	13.2	13.9	13.1

Erica only took part in six of these competitions and had a

- mean score of 13.4
- median score of 13.3
- range of scores of 1.5

Shona thinks on average her scores were better than Erica's scores.
Erica does not agree.

Explain how Shona and Erica could both be correct.
You **must** show your working.

(3)

mean for Shona = $\dfrac{12 \cdot 9 + 14 \cdot 3 + 14 \cdot 1 + 13 \cdot 0 + 13 \cdot 2 + 13 \cdot 9 + 13 \cdot 1}{7}$

$= \dfrac{94 \cdot 5}{7}$

$= 13 \cdot 5$

median for Shona: 12·9   13·0   13·1   ⟨13·2⟩   13·9   14·1   14·3

median

Shona's mean is higher than Erica's but Shona's median is lower than Erica's

(Total for Question 2 is 3 marks)

3 Archie puts an advert for his company online.
He has to pay £0.85 each time someone clicks on his advert.

At the end of week 1 Archie pays £650.25 for the total number of clicks on his advert.

Archie estimates that each week the total number of clicks on his advert will increase
by 20% on the previous week. → 100% + 20% = 120% = 1·2

Archie thinks that in week 3 more than 1000 people will click on his advert.

Is he correct?
Show why you think this.

(4)

number of clicks in week 1 is 650·25 ÷ 0·85 = 765

In week 3 will have 765 × 1·2 × 1·2 = 1101·6 clicks

increase   increase
by 20% in   by 20% again
week 2   in week 3

Yes, 1101·6 is more than 1000 clicks

Yes

(Total for Question 3 is 4 marks)

4 The scatter diagram shows information about the age of patients and the waiting time for these patients to get an appointment.

Waiting time (days)

Age of patients (years)
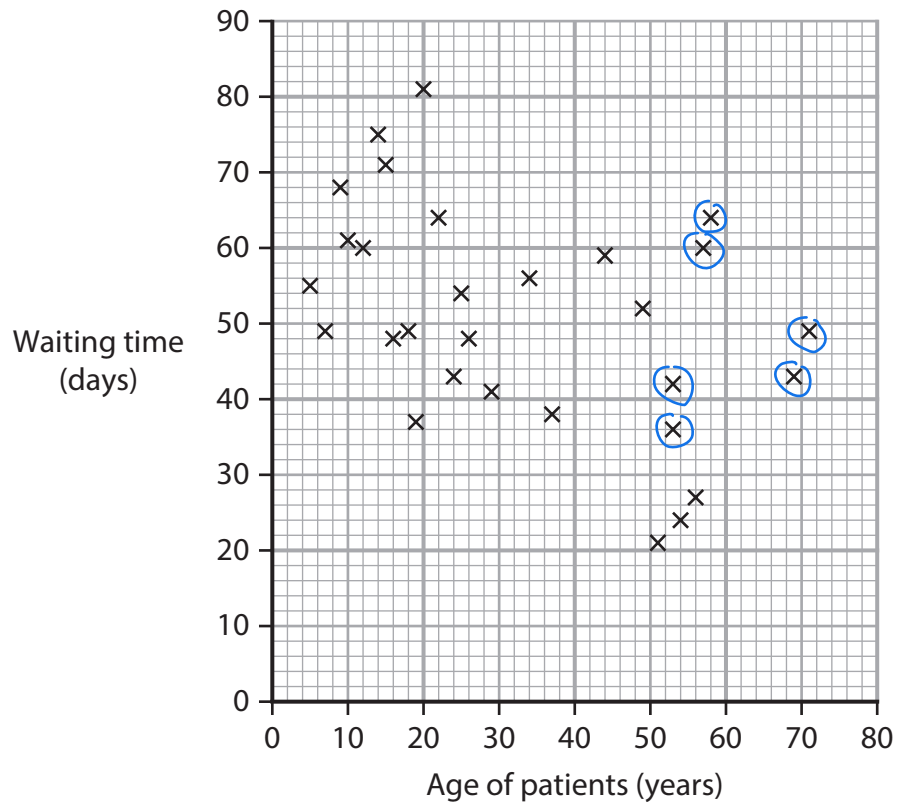
(a) Describe the relationship between the age of patients and the waiting time.

(1)

Weak negative correlation

(b) Work out the fraction of patients aged over 50 who had a waiting time greater than 30 days.

(2)

9 patients over 50

6 of these waited over 30 days

$\frac{6}{9} = \frac{2}{3}$

$\dfrac{2}{3}$

(Total for Question 4 is 3 marks)

5 Kelly works in a grocery shop.

She wants to order 120 chocolate eggs.

Kelly finds this offer.

box of 30 chocolate eggs

normal price £65

now 16% off the normal price

She thinks she can buy 120 chocolate eggs for less than £200 with this offer.

(a) Is Kelly correct?
Show why you think this.

(4)

She needs $120 \div 30 = 4$ boxes

Would normally cost $4 \times £65 = £260$

16% of $260 = 0.16 \times 260$
$\qquad\qquad\qquad = £41.60$

So discounted price is $260 - 41.60 = £218.40$

↑

no, not less than £200

No

☑ (b) Use a reverse calculation to show a check of your answer.

(1)

4 × 30 = 120 eggs

(Total for Question 5 is 5 marks)

6 Abdul is an apprentice architect.

He has this diagram of a building.
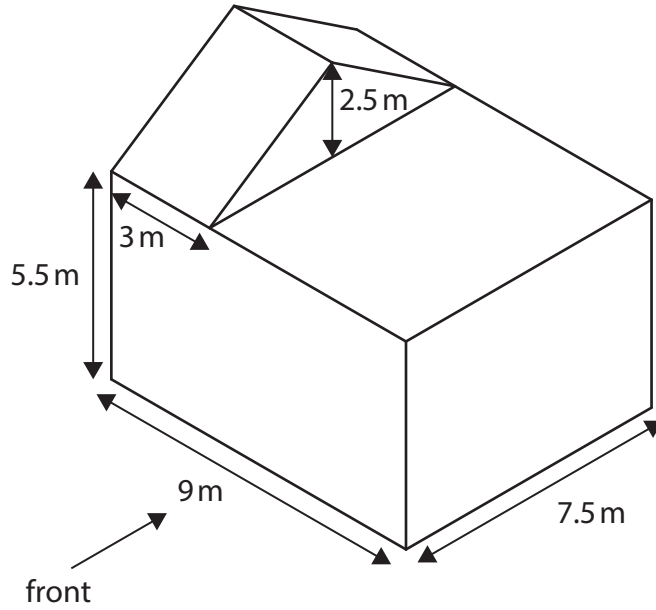
Draw the front elevation of this building on the centimetre grid.
Use a scale of 1 : 100   ⟵ 1m is 1cm on diagram

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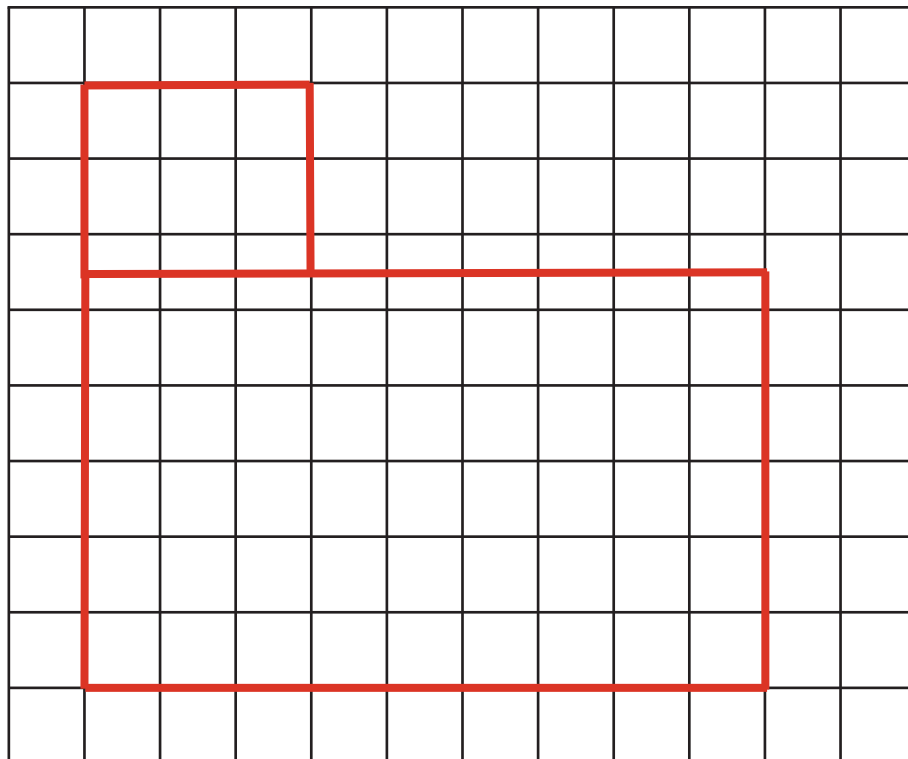
(Total for Question 6 is 3 marks)

7 The tree diagram shows the probability that an item of clothing selected at random is

- a skirt or a dress
- long or short.

(a) Complete the probability tree diagram.

(2)

skirt — 0.3 — long

0.45

0.7 (short)

0.55 (dress)

dress — 0.65 — long

0.35 — short
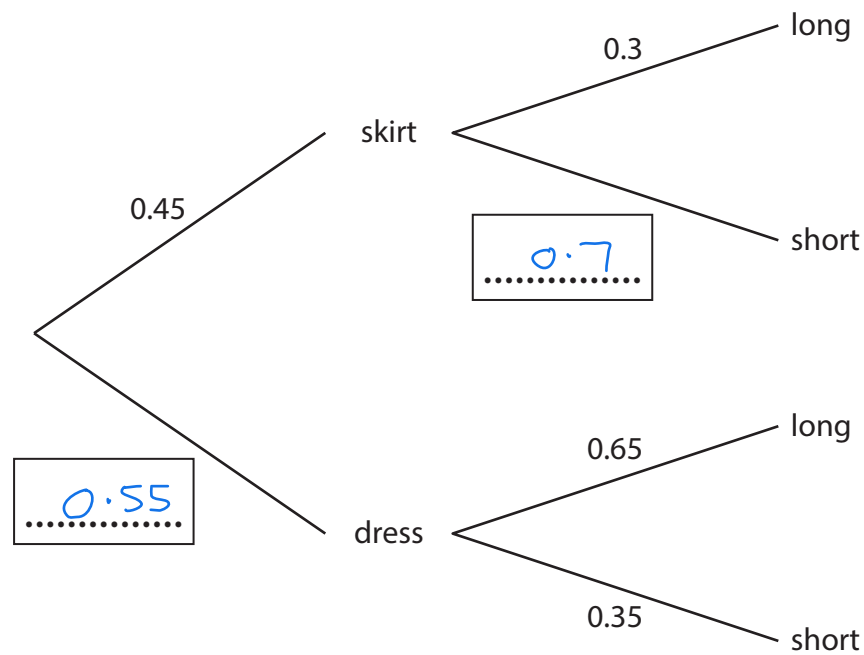
An item of clothing is chosen at random.

(b) Work out the probability that this item is a long skirt.

(2)

$0.45 \times 0.3 = 0.135$

(Total for Question 7 is 4 marks)

8 Takeshi is the manager at a laboratory.

The table shows information about the number of tests done at the laboratory each day in April.

Number of tests	Frequency (days)	midpoint	midpt x freq
1 to 10	8	5.5	5.5 × 8 = 44
11 to 20	14	15.5	15.5 × 14 = 217
21 to 30	5	25.5	25.5 × 5 = 127.5
31 to 40	3	35.5	35.5 × 3 = 106.5
Total	**30**		495

Takeshi expects the mean number of tests done each day in May to be 12.5% greater than the estimated mean number of tests done each day in April.

The laboratory is open for 31 days in May.

Each test brings an income of £130 for the laboratory.

Work out the expected income for the laboratory in May.
You **must** show your working.

(6)

mean for April = 495 ÷ 30
= 16.5 tests per day

May is 12.5% greater so 16.5 × 1.125 = 18.5625 tests per day

↗
100% + 12.5%
= 112.5%
= 1.125

31 days in May, so 31 × 18.5625 = 575.4375 tests in May

£130 per test, so 575.4375 × £130 = £74,806.88

£ 74,806·88

(Total for Question 8 is 6 marks)

9 Jasper organises large events.

Last week 23 workers took 4 hours to build a stage for a concert.

Next week Jasper wants to hire workers to build the same stage in 3 hours.

Work out the minimum number of workers needed to build the stage in 3 hours.

(3)

23 workers ⟶ 4 hrs
×4
92 workers ⟶ 1 hr ÷4
÷3
30·67 workers ⟶ 3 hrs ×3

So 31 workers

31

(Total for Question 9 is 3 marks)

10 Here is a coordinate grid.
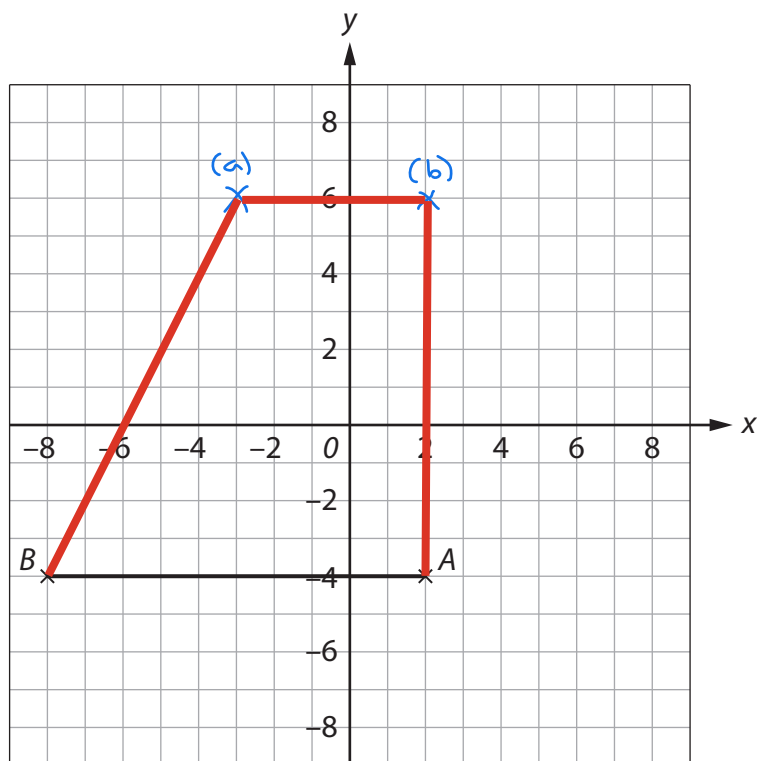
(a) Plot and label the point *C* at (−3, 6)

(1)

Sylvie wants to draw a trapezium *ABCD* on the grid.

She will use the straight line *AB* as the base of the trapezium.
Sylvie wants the trapezium to have two right angles.

(b) Plot and label a point *D* on the grid to complete the trapezium for Sylvie.

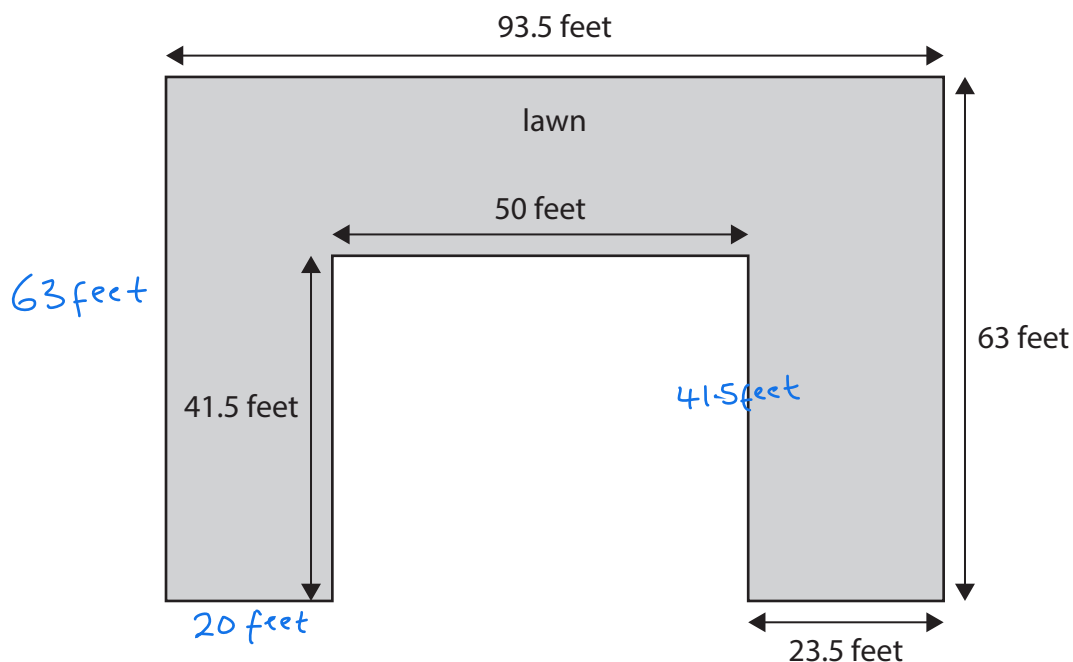**(2)**

(Total for Question 10 is 3 marks)

Turn over ▶

11 Vicky works in a park.

She needs to put edging around a lawn in the park.

The diagram shows the dimensions of the lawn.
The lawn is made up of rectangles.

Vicky will buy edging in 5 metre lengths.
She can cut and join the lengths of edging.
She knows that 1 metre is 3.3 feet.

Each length of edging costs £38.99
Vicky has £1000 to buy the edging.

Does Vicky have enough money to buy all the edging she needs?

(5)

Perimeter = 93.5 + 63 + 20 + 41.5 + 50 + 41.5 + 23.5 + 63
= 396 feet
= 396 ÷ 3.3 metres
= 120 metres

Comes in 5m lengths, so needs 120 ÷ 5 = 24 lengths

costs 24 × £38.99 = £935.76

Yes, £1000 is enough money

(Total for Question 11 is 5 marks)

12

(a) Write as a number

seven million four hundred and thirty thousand nine hundred.

(1)

7,430,900

Dorothy reads an article about a talent show.

The article states that 17 424 people applied to enter the show last year.
Each person that applied was either a singer or a dancer.

The ratio of the number of singers to the number of dancers was 3 : 5 ← 3+5 = 8 parts

This year 19 500 people applied to enter the show.
39% of these people were singers.

Dorothy thinks that at least 1200 more singers applied to enter the show this year than last year.

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

(5)

÷8 (8 parts = 17,424) ÷8
     (1 part = 2178)
×3 (3 parts = 6534) ×3   so 6534 singers last year

39% of 19,500 is 0·39 × 19500
                        = 7605   so 7605 singers this year

Difference is 7605 − 6534 = 1071

So 1071 more singers this year
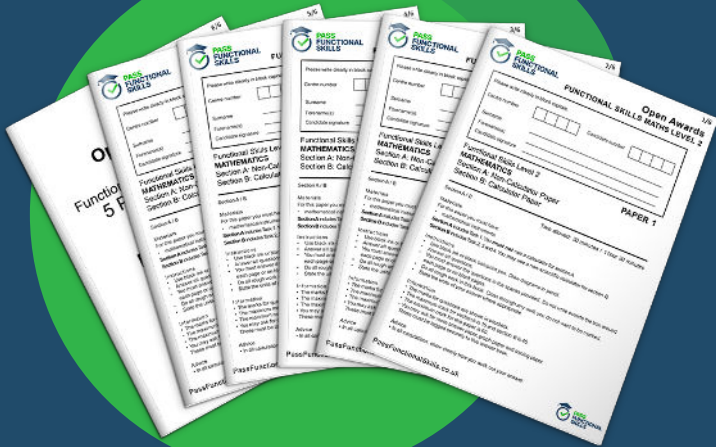
No, Dorothy is wrong

(Total for Question 12 is 6 marks)

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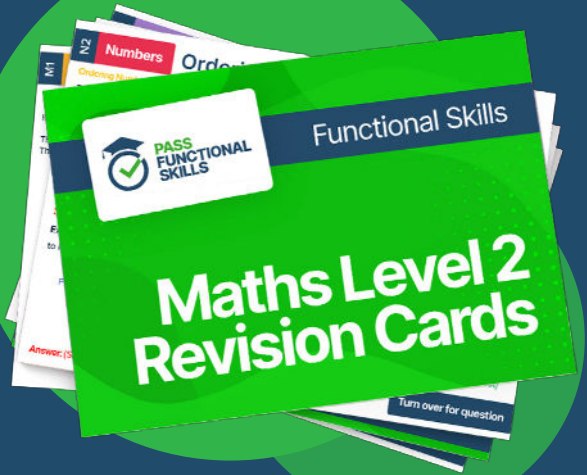**TOTAL FOR PAPER IS 64 MARKS**

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