Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel Functional Skills

Centre Number	Candidate Number

Practice Set 2

Time: 25 minutes | Paper Reference **PRACL2/N02**

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.
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- Sign the declaration.
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- 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 ▶

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1/1/1

S 6 8 2 1 4 A 0 1 0 8

Pearson

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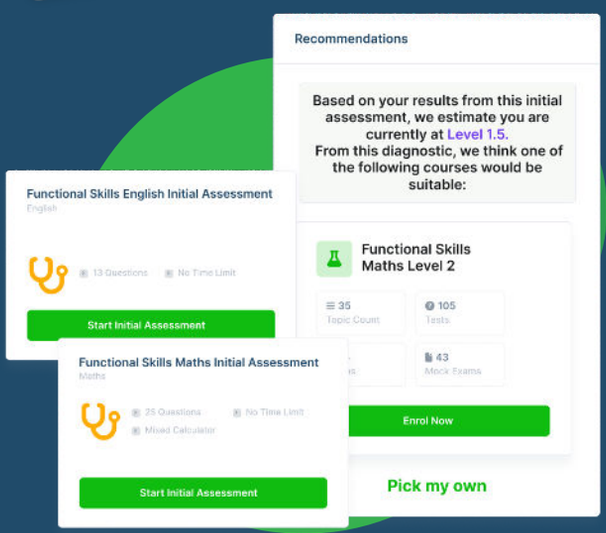

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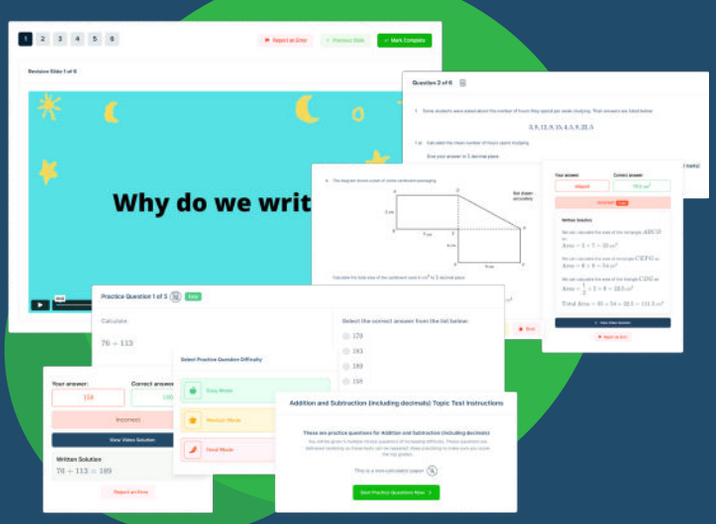

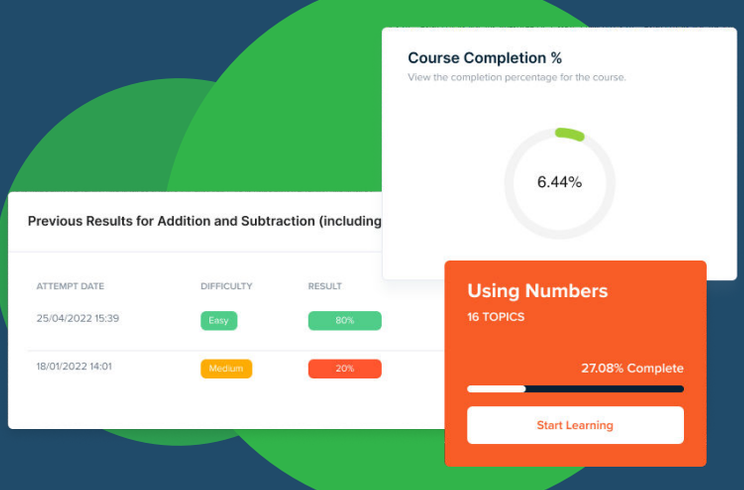

- See your progress through as you progress through each topic area
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Or visit
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DO NOT WRITE IN THIS AREA

SECTION A

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

1

(a) Work out $700 - 7^2$

$7^2 = 49$

$$\begin{array}{r} 700 \\ -\ \ 49 \\ \hline 651 \end{array}$$

651

(2)

Here is a list of numbers.

29 31 46 43 29 31 38 34 43 35 43

(b) Write down the mode of these numbers.

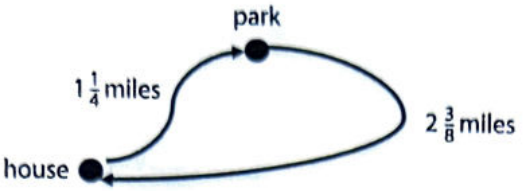
mode = no. that occurs the most.

43

(1)

(Total for Question 1 is 3 marks)

2 Ola will run from her house to a local park and back to her house.
She sees this sketch of the route she will take.



What is the total distance of the route Ola will run?
Give your answer as a mixed number.

You **must** show your working.

(3)

$$1\frac{1}{4} + 2\frac{3}{8}$$

$$= \frac{5}{4} + \frac{19}{8}$$

$$= \frac{10}{8} + \frac{19}{8}$$

$$= \frac{29}{8}$$

$$= 3\frac{5}{8}$$

$3\frac{5}{8}$ miles

(Total for Question 2 is 3 marks)

3 Saima is making a filling for a cake.

Saima mixes jam, sugar and soft cheese in the ratio 4 : 1 : 16

She uses 32 oz of soft cheese.

Saima knows that 1 oz is 28.3 grams.

(a) How many grams of jam does Saima need?

(3)

Jam : Sugar : Cheese
4 : 1 : 16

Jam : Cheese
4 : 16
×2 (8oz : 32oz) ÷2

283
× 8
2264

×10

÷10

$8_{oz} = 8 \times 28.3g = 226.4g$

226.4 g

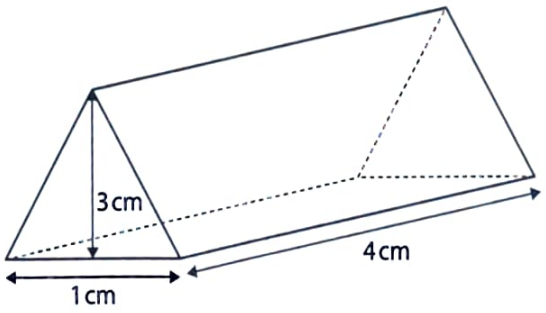
☑ (b) Use estimation to show a check of your answer.

(1)

8 + 30 = 240

(Total for Question 3 is 4 marks)

4 Jack is a jeweller.
He makes a pendant in the shape of a triangular prism as shown in the diagram.



Jack makes the pendant from solid gold.

He uses this formula.

$V = TL$

where V = volume of a triangular prism (cm^3)
T = area of the triangular face (cm^2)
L = length of the prism (cm)

Jack knows that

- mass = density × volume
- the density of gold is 19 grams per cm^3
- the cost of 1 gram of gold is £40

Jack sells the pendant for £382 more than the total cost of the gold needed to make the pendant.

How much does Jack sell the pendant for?

(6)

Area of triangular face: $\frac{b \times h}{2} = \frac{1 \times 3}{2} = 1.5 cm^2 = T$

Volume = $T \times L = 1.5 \times 4 = 6 cm^3$

Mass = density × V = $19 \times 6 = 114g$

$$\begin{array}{r} 19 \\ \times\ 6 \\ \hline 114 \end{array}$$

Cost to make pendant: $114g \times £40 =$

$$\begin{array}{r} 114 \\ \times\ 40 \\ \hline 4560 \end{array} \quad = £4560$$

Jack sells the pendant for £4560 + £382:

$$\begin{array}{r} 4560 \\ +\ 382 \\ \hline 4942 \end{array}$$

$= £4942$

£ 4942.

(Total for Question 4 is 6 marks)

TOTAL FOR SECTION A IS 16 MARKS

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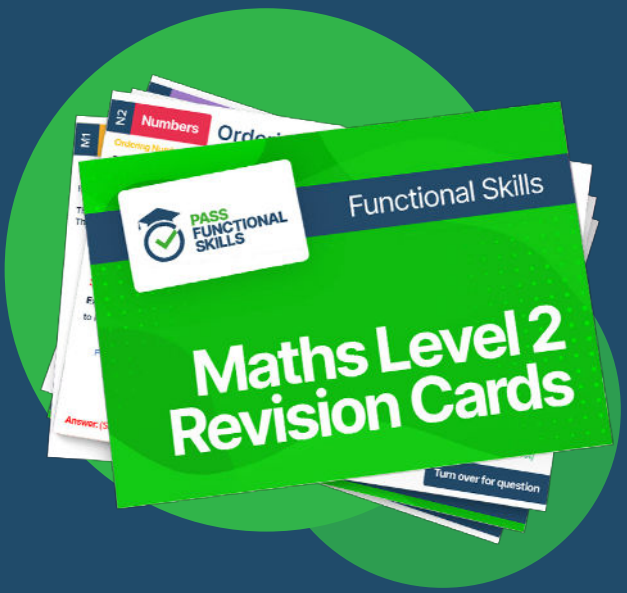

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Practice Set 2

Time: 1 hour 30 minutes | Paper Reference **PRACL2/C02**

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.

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Information

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- The total mark for this paper is 64.
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Advice

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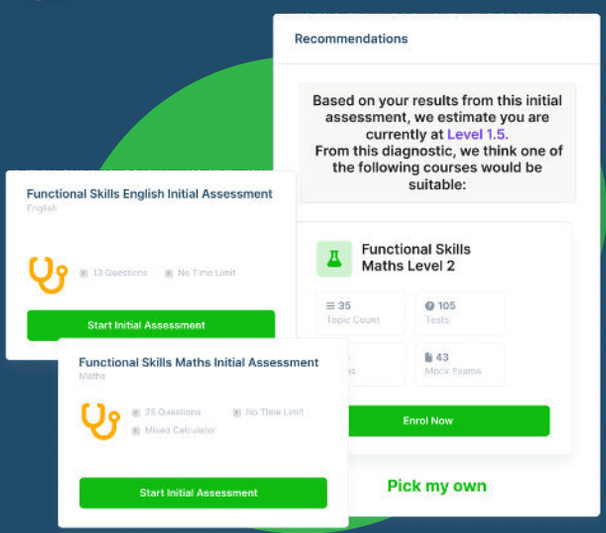

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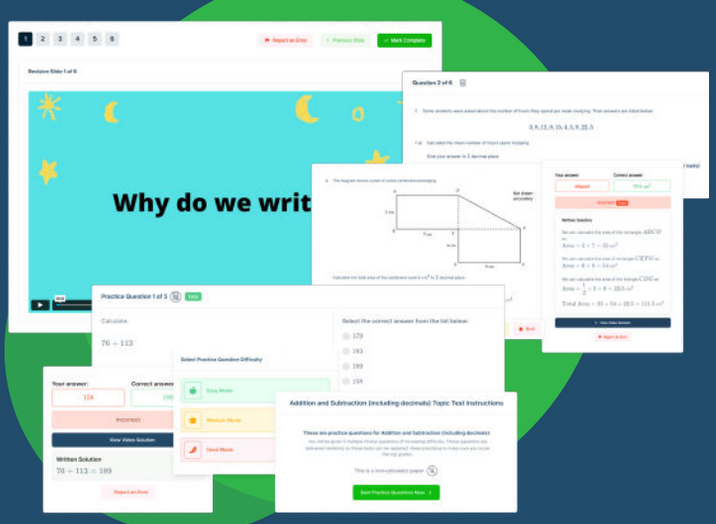

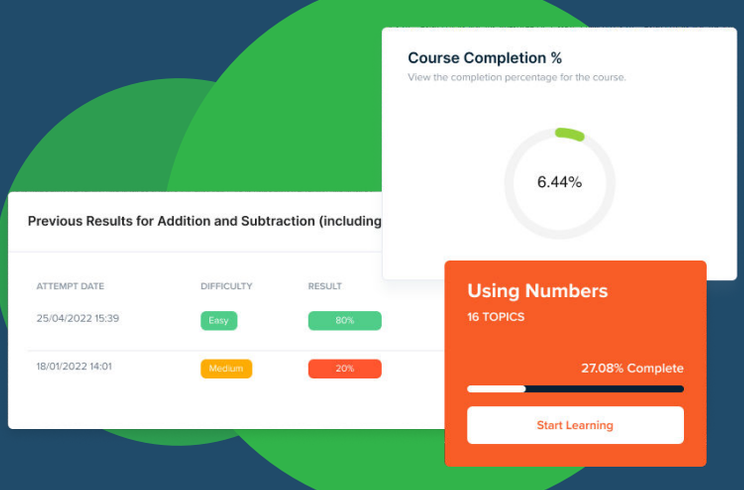

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SECTION B

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

1 Luke plays a computer game where he manages a city.
He buys two buildings.

Luke receives

- 135 coins every 8 hours from building A
- 36 coins every 15 minutes from building B.

Luke thinks he receives a total of 4000 coins in 24 hours from these buildings.

Is Luke correct?
Show why you think this.

(3)

- $24 \div 8 = 3$

Luke receives 135 coins 3 times in 24 hours:

$135 \times 3 = 405$ coins for building A.

- 15 minutes means he gets 36 coins 4 times each hour $(60 \div 15 = 4)$.

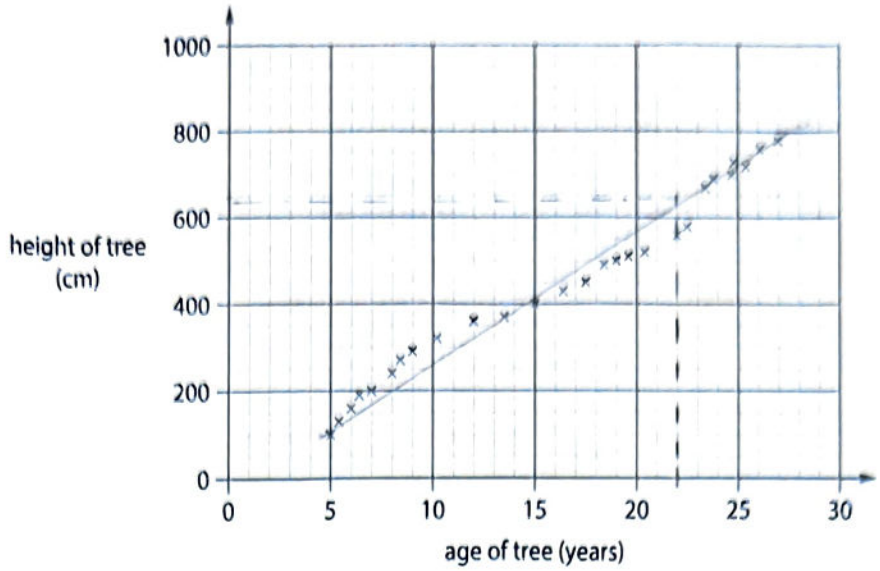
So gets $4 \times 24 \times 36 = 3456$ coins from building B.

Total: $405 + 3456 = 3861$

No Luke is wrong.

(Total for Question 1 is 3 marks)

2 The scatter diagram shows information about the age and height of some trees.



(a) Describe the relationship shown in the diagram.

(1)

Positive correlation - as age increases the height of the tree increases.

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

(1)

(c) Estimate the age of a tree with a height of 625 cm.

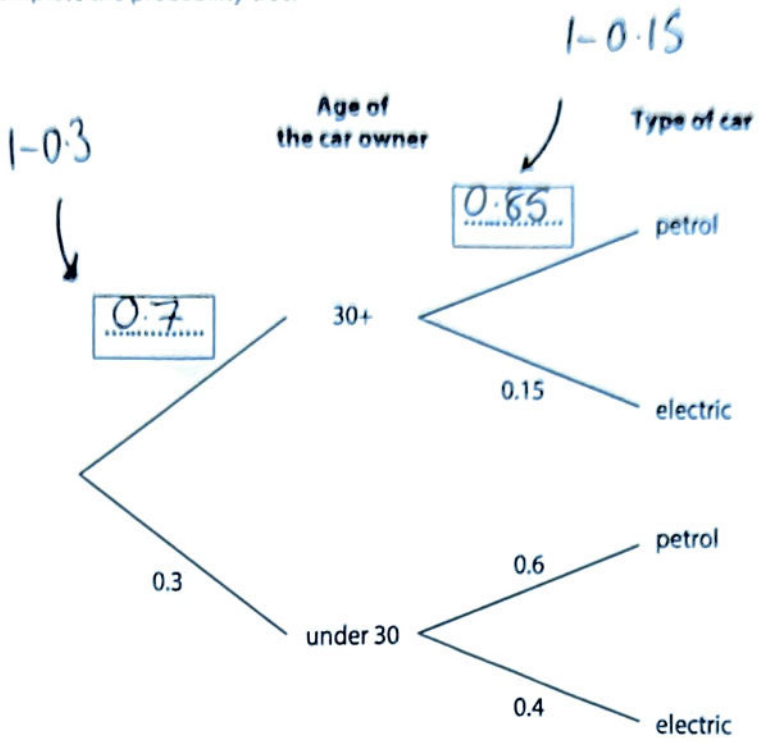
(1)

22 years

(Total for Question 2 is 3 marks)

3 The tree diagram shows the probability of selecting a car owner by their age and the type of car they have.

(a) Complete the probability tree. (2)



A person is chosen at random.

(b) Work out the probability that this person is under 30 and has an electric car. (2)

P(Under 30 and electric car) = 0·3 × 0·4 = 0·12

= P(under 30) × P(Electric)

0·12

(Total for Question 3 is 4 marks)

4 Sasha is the manager at a factory.
Last weekend 15 employees assembled 390 identical wardrobes.

Sasha wants 1200 of these wardrobes to be assembled next weekend.

How many employees does Sasha need next weekend?
You **must** show your working.

(3)

(1200 ÷ 390) × (15 employees ↔ 390 wardrobes
46.153846 ↔ 1200 wardrobes) × (1200 ÷ 390)
employees

47 employees

(Total for Question 4 is 3 marks)

5 Vera is a shop manager.

She has this information about the income in her shop for eight weeks this year.

Week	1	2	3	4	5	6	7	8
Income (thousands of £)	53.5	42.3	39.8	45.1	52.4	19.4	47.9	42.5

The median income for the same eight weeks last year was £49 300

Vera knows that the median income for these eight weeks has decreased this year compared to last year.

(a) Work out the percentage decrease of the median income.

Give your answer to 2 decimal places.

(4)

Median this year:

Put into ascending order:

19.4, 39.8, 42.3, 42.5, 45.1, 47.9, 52.4, 53.5

Median: $\frac{42.5 + 45.1}{2} = 43.8$

$\% \text{ change} = \frac{\text{change}}{\text{original}} \times 100$

Change = 49.3 − 43.8 = 5.5

Original = last year's median = 49.3

% change = $\frac{5.5}{49.3} \times 100 = 11.156186661\%$

2 decimal places = 11.16%

11.16 %

(b) Show a check of your calculation for the median.

(1)

(Total for Question 5 is 5 marks)

6 Carlos invests £4500 for 3 years.
He receives compound interest of 1.5% per year.

Carlos thinks the total of the money he invests and the interest will be more than £4750 at the end of the 3 years.

Is he correct?
Show why you think this.

(3)

Increasing by 1.5% means multiply by 1.015.

For 3 years means multiply by 1.015^3 (compound interest)

$4500 \times 1.015^3 = £4705.55$

No Carlos is wrong.

(Total for Question 6 is 3 marks)

7

(a) Write 21.9% as a decimal.

(1)

$21.9 \div 100 = 0.219$

0.219

(b) Work out 37% of 4618.57
Give your answer to 1 decimal place.

(2)

4618.57×0.37

$= 1708.8709$

$= 1708.9$ (1 decimal place)

1708.9

(c) Write fifty-one million forty-nine thousand one hundred and twelve in figures.

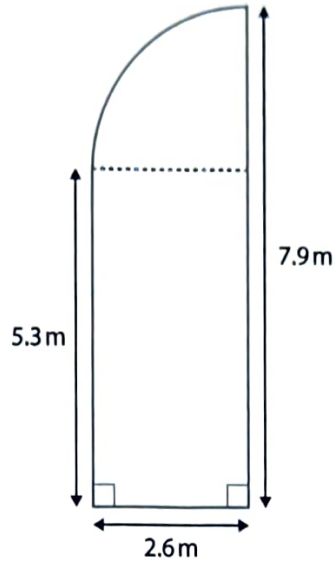
(1)

51 049 112

(Total for Question 7 is 4 marks)

8 Jessie needs to cover a wooden floor with varnish.

The floor is in the shape of a rectangle and a quarter circle.



A tin of varnish

- covers 6 m²
- costs £5.41

Jessie has £25 to buy the tins of varnish she needs to cover this wooden floor.

Is £25 enough to buy all the tins of varnish Jessie needs?

(6)

Area of Circle: $\pi r^2 = \pi \times 2.6^2 = 6.76\pi \text{ m}^2$

$= 21.23716634 \text{ m}^2$

Area of quarter of the circle:

$21.23716634 \div 4 = 5.309291585 \text{ m}^2$

Area of rectangle: $2.6 \times 5.3 = 13.78 \text{ m}^2$

Total area = 13.78 + 5.30929158

= 19.08929159 m^2

No. tins needed:

19.08929159 ÷ 6 = 3.181548598 tins.

So need 4 tins

Cost of tins:

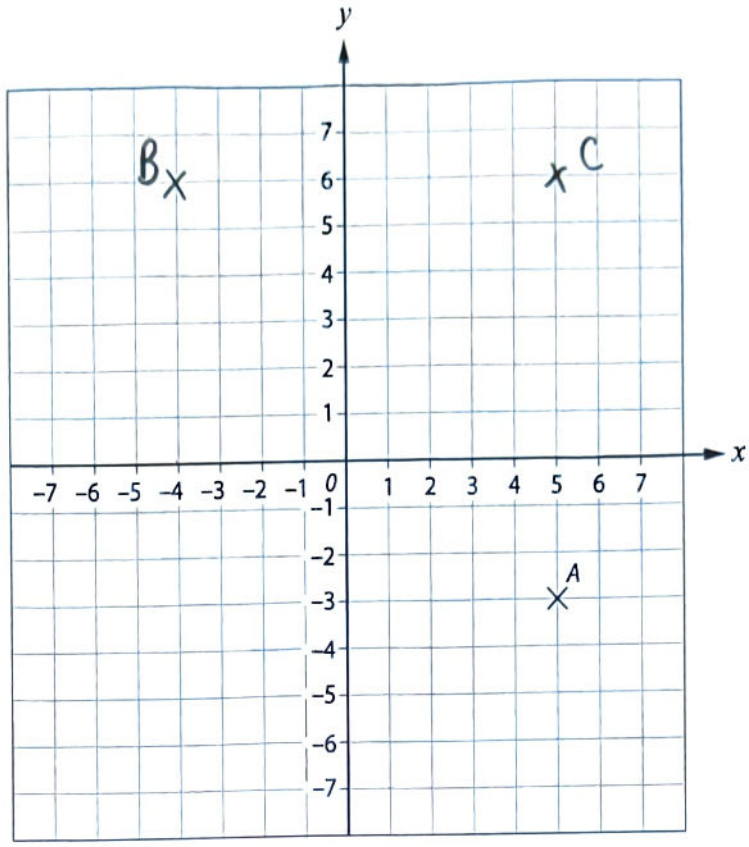
~~3.181548598 × £5.41 =~~

4 × £5.41 = £21.64

Yes £25 is enough so Jessie is correct.

(Total for Question 8 is 6 marks)

9 Here is a coordinate grid.



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

(1)

(5, -3)

(b) Plot point *B* with coordinates (– 4, 6) on the grid.
Remember to label your point.

(1)

(c) Plot a point *C* on the grid so that angle *ACB* is a right angle.
Remember to label your point.

(1)

(Total for Question 9 is 3 marks)

10 Kevin buys a second-hand car for £7346
He knows that the car is worth 27% less than when it was brand new.

Kevin thinks that the car cost more than £9000 when brand new.

Is Kevin correct?
Show why you think this.

(3)

100% − 27% = 73% = 0·73 = 1 decrease of 27%.

0·73 × Original price = £7346

Original price = £7346 ÷ 0·73

= £10063.01369863

= £10063.01

Yes

Kevin is correct.

(Total for Question 10 is 3 marks)

11 Emma is the recruitment manager in a large company.

She has this information about the number of workers in each of the 20 offices of the company.

number of workers	number of offices
1 to 20	9
21 to 40	8
41 to 60	2
61 to 80	1

Emma estimates the mean number of workers in an office as 30

(a) Is Emma correct?
Show why you think this. (3)

No Workers	frequency	midpoint	frequency × midpoint
1 to 20	9	10.5	94.5
21 to 40	8	30.5	244
41 to 60	2	50.5	101
61 to 80	1	70.5	70.5

Estimated
Total no. workers: $94.5 + 244 + 101 + 70.5$

$= 510$

Estimated mean $= \frac{510}{(9+8+2+1)} = \frac{510}{20}$

$= 25.5$

No, Emma is not correct.

200 people apply to work at a new office.
49 of these people are employed.

(b) Work out 49 as a percentage of 200

(2)

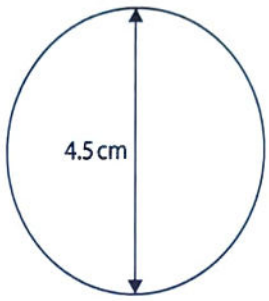
$\frac{49}{200} \times 100 = 24.5$

24.5 %

(Total for Question 11 is 5 marks)

12 Claire is a designer.
She needs to put some lights around a circular bandstand in a park.

Claire has this scale diagram of the plan view of the bandstand.



scale 1 : 200

= 475 cm

Claire knows that

- a set of lights is 4.75 m in length
- each set of lights costs £27.99

(a) Work out the total cost for the sets of lights Claire needs. **(5)**

Scale ×4.5 1 cm : 200 cm ×4.5
4.5 cm : 900 cm

The diameter of the bandstand is 900cm.

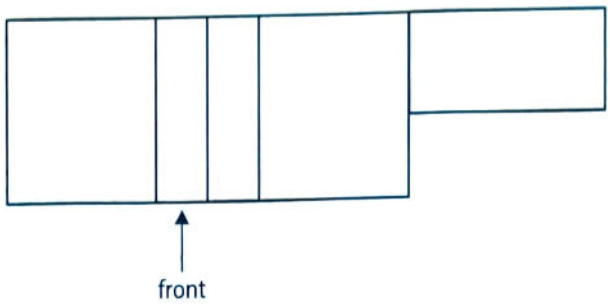
Circumference of circle : $\pi \times d = \pi \times 900$
$= 900\pi$ cm
$= 2827.433388$ cm

No. sets of lights : $2827.433388 \text{ cm} \div 475$ cm
$= 5.95249$, so 6 sets needed.

Total cost : $6 \times 27.99 = £167.94$

£ 167.94

Here is a plan view of another building Claire designs.

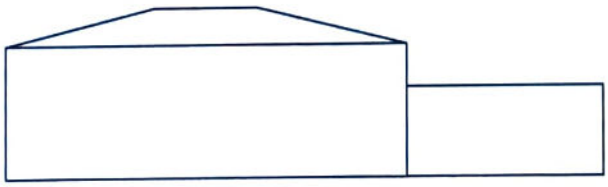


An apprentice draws the front elevation of this building.

(b) Which sketch below can be the front elevation for this building?
Tick (✔) the correct answer.

(1)

( )



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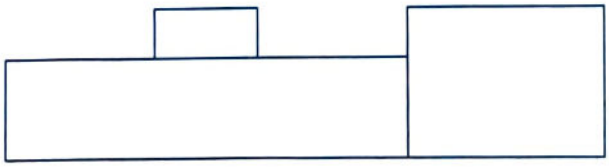
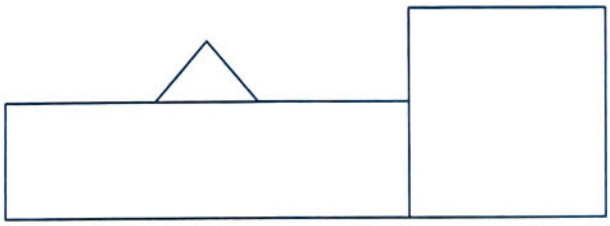


(✓)



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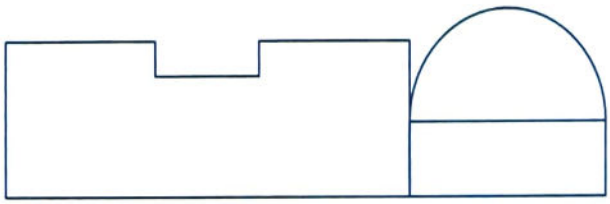

(Total for Question 12 is 6 marks)

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

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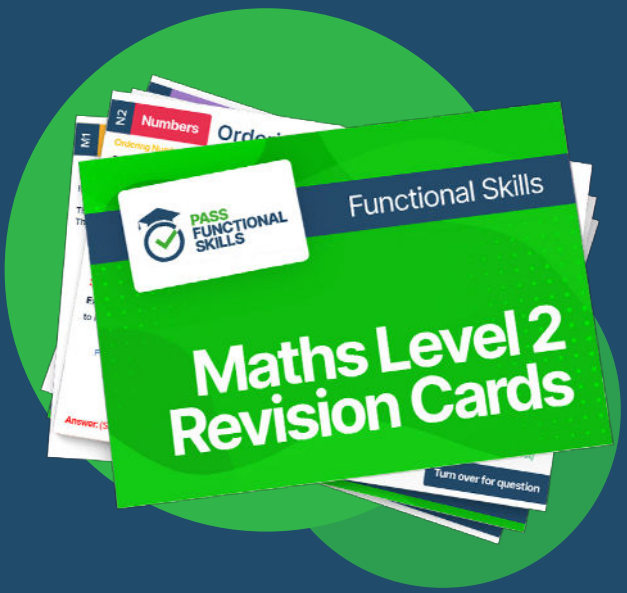

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