Name: _____

Maths Genie Stage 7

Test D

Instructions

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- **Calculators may be used.**

Information

- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end

1 n is an integer such that $-5 < 2n < 4$

Write down all the possible values of n.

....
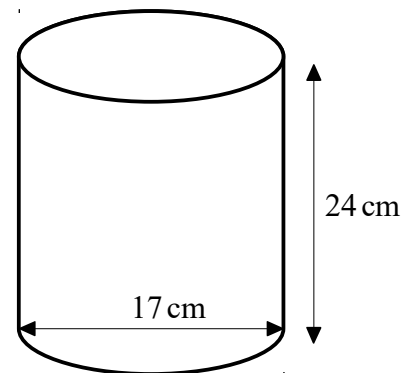
(Total for Question 1 is 2 marks)

2 The probability that a sunflower seed will germinate is 0.84

Alan is going to plant 50 sunflower seeds.

Work out an estimate for the number of seeds that will germinate.

....

(Total for Question 2 is 2 marks)

3 A solid cylinder has a diameter of 17 cm and a height of 24 cm.

Work out the total surface area of the cylinder.
Give your answer correct to 3 significant figures.

24 cm

17 cm

....cm²
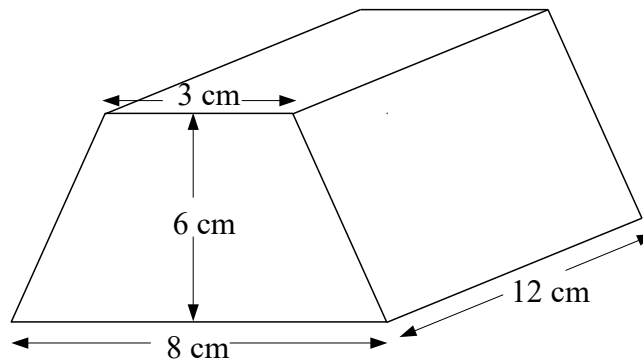
(Total for Question 3 is 3 marks)

4 Perrie invests £9200 for 3 years in a savings account.
She gets 2.4% per annum compound interest.

Calculate **the total amount of interest** Perrie will get after 3 years.

£…..

(Total for Question 4 is 3 marks)

5
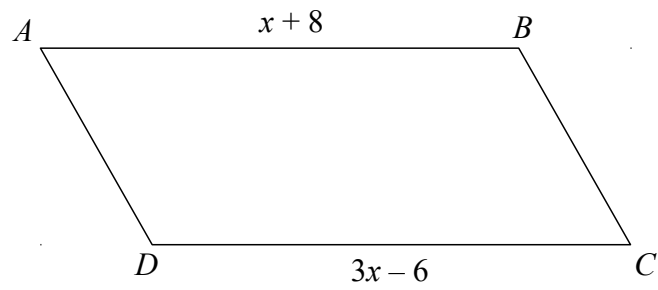

The diagram shows a prism.
The cross-section of the prism is a trapezium.

Work out the volume of the prism.

…....................……………........cm^3

(Total for Question 5 is 3 marks)

6

$$A \quad\quad x + 8 \quad\quad B$$

$$D \quad\quad 3x - 6 \quad\quad C$$

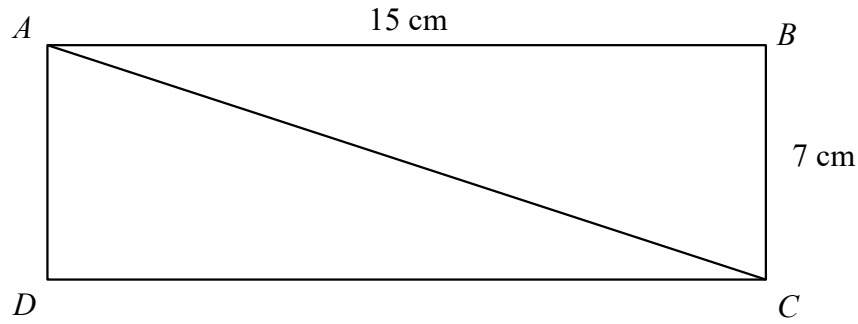*ABCD* is a parallelogram
All measurements are in centimetres.
The perpendicular height of the parallelogram is 5 cm.

Find the area of *ABCD*

....

(Total for Question 6 is 4 marks)

7

A ————— 15 cm ————— B

7 cm

D   C

ABCD is a rectangle .
Calculate the length of the diagonal *AC*.

Give your answer correct to 1 decimal place.

…......................................cm

(Total for Question 7 is 3 marks)

8 Here are the first four terms of an arithmetic sequence.
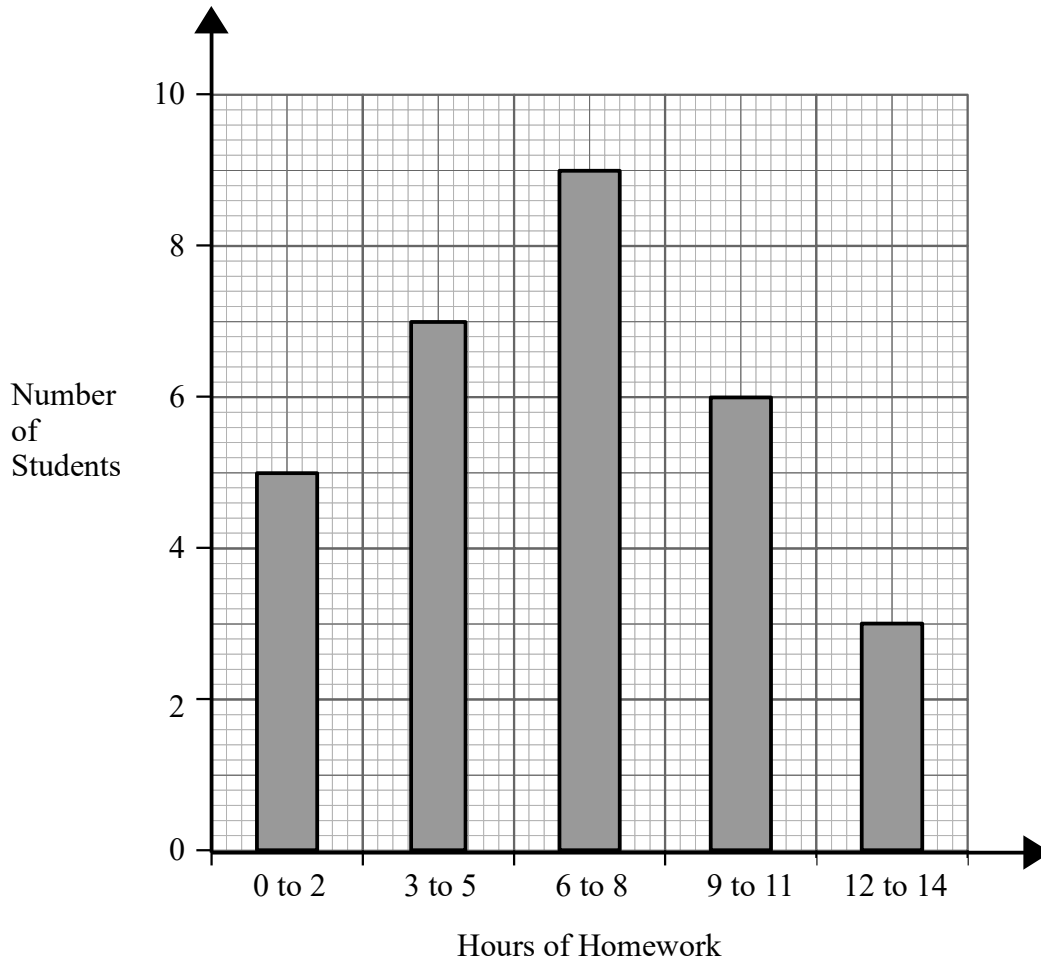
33   29   25   21

Write down an expression, in terms of *n*, for the *n*th term of the sequence.

.................……..........................

(Total for Question 8 is 2 marks)

9 The bar chart shows how many hours of homework 30 students did last week.

Calculate an estimate for the mean number of hours of homework.

....… hours

(Total for Question 9 is 3 marks)