End of Term assessment

Second half term

Full Name: _____

You must show all working. A calculator may be used for all questions.

Total marks 45. Time allocated 75 minutes.

2D Shapes

3D Shapes

Angles

Angles in polygons

Probability

Averages

Indices and Number Types

Standard Form

Compound Interest and Depreciation

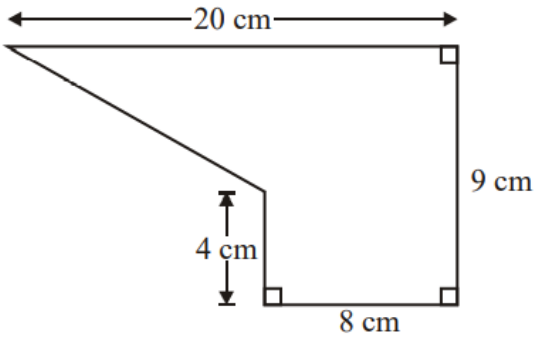
Sequences

Pythagoras Theorem

1) The diagram below shows a shape.

Work out the **area** of the shape.

You must show **units.**



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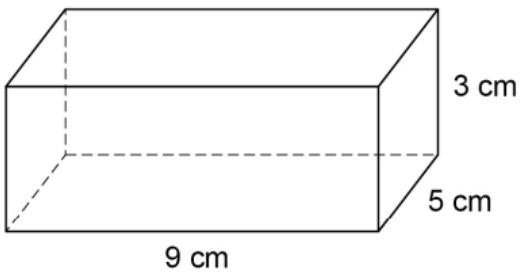
(4 marks)

Answer _____

2) Here is a cuboid.



The two **largest** faces are blue.

The other four faces are green.

Is the total blue area greater than the total green area?

You must show your working.

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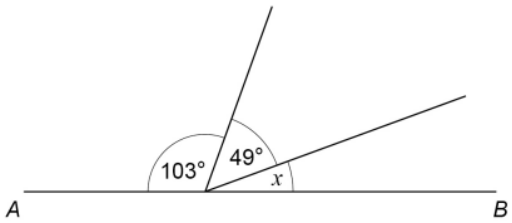
(3 marks)

Answer _____

3) AB is a straight line.



Not drawn accurately

Work out the size of angle x.

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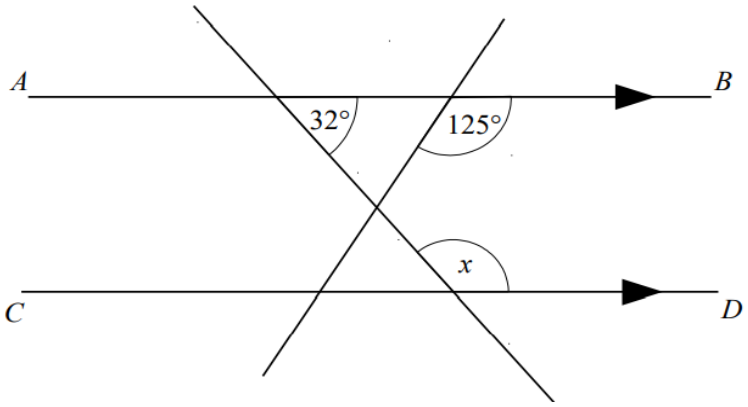
(2 marks)

Answer _____degrees

4)



AB and CD are parallel lines.

a) Find the size of angle x.

……

(1 mark)

b) Give a reason for your answer.

……

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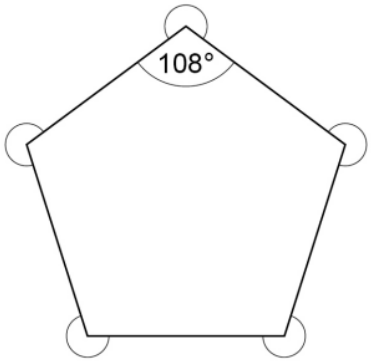
(2 marks)

Answer _____

5) The interior angle of a regular pentagon is 108°

Work out the sum of the five **reflex** angles at the vertices of a regular pentagon.



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(3 marks)

Answer _____

6) Here are some number cards

1	5	8	2	8	3	2

One of the cards is selected at random.

a) Write down the probability that card has the number 8 on it.

……

(1 mark)

b) Find the probability the card has an odd number on it.

……

(2 marks)

7) The table shows the probabilities that a biased dice will land on 1, on 2, on 3, on 4, on 5 and on 6.

Number	1	2	3	4	5	6
Probability	0.14	0.2	0.08		0.13	0.21

The dice is rolled 200 times.

Work out an estimate for the number of times the dice will land on 2 or on 4.

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(3 marks)

Answer _____

8) The table below gives information about the time taken for 20 people to run 5 km.

Time (minutes)	**Frequency**
$15 < t \leqslant 20$	3
$20 < t \leqslant 25$	6
$25 < t \leqslant 30$	7
$30 < t \leqslant 40$	4

a) Find the class interval that contains the median.

…… minutes

(1 mark)

b) Work an estimate for the mean time.

…… minutes

(3 marks)

9) a) Simplify $a^9 \times a^4$

……

(1 mark)

b) Simplify $(4b^2c)^3$

……

(1 mark)

c) Simplify $d^9 \div d^4$

……

(1 mark)

10) Simplify

$$\frac{6a^3b^2 \times 2a^5b}{3a^2b^4}$$

……

(2 marks)

11) a) Write 0.0065 in Standard Form

……

(1 mark)

b) Write 3×10^4 in ordinary form.

……

(1 mark)

12) The diameter of Neptune is $5.0 \times 10^4 km$

The diameter of Mars is $6.8 \times 10^3 km$

Calculate the difference between the diameter of Neptune and the diameter of Mars. Give your answer in standard form.

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(4 marks)

Answer _____

13) Jade bought a house for £350,000.

In the first year the house price increased by 3%.

In the second year the house price increased by 2%.

In the third year the house price depreciated by 5%.

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

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(3 marks)

Answer _____

14) Here are the first four terms of an arithmetic sequence

4 11 18 25

Write down an expression in terms of n, for the nth term of the sequence

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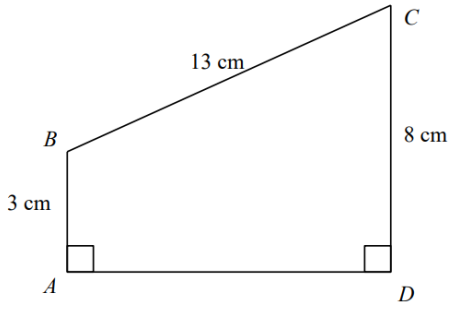
(2 marks)

Answer _____

15) $ABCD$ is a trapezium.

Calculate the length of AC.

Give you answer correct to 3 significant figures.



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(4 marks)

Answer _____

END OF TEST