Warwick School



13+ Sample Paper

Mathematics

Please write your full name here:

_____

Before you start read these instructions:

- This test lasts one hour.
- The marks for each part of each question are given in brackets.
- We would like to see how you worked out your answers, so show your working. You may receive some credit even if the answer is wrong.
- If you get stuck, just go on to the next question. You may have time at the end to try the question again.
- Do **not** use a calculator.

SAMPLE

Remember to show your working

1) Calculate:

a) $3\frac{2}{3} - 1\frac{3}{4}$ ..... [2]

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b) $6\frac{3}{4} \div 1\frac{1}{2}$ ..... [2]

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2) Simplify:

a) $2x + 3y + 4x - 2y$ ..... [2]

b) $p^2 + p^2 + p^2$ ..... [1]

3) Work out the value of $3x - 4y$ when $x = -2$ and $y = -5$. [2]

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4) Nick takes 28 boxes out of his van. Each box weighs 32.9 kg. Work out the total weight of all the boxes. [3]

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SAMPLE

Remember to show your working

5) 60 British students visited one foreign country last week. The two-way table shows some of the information about these students.

	France	Germany	Spain	Total
Female			9	34
Male	15			
Total		25	18	60

a) Complete the two-way table. [3]

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One of the students is picked at random.

b) Write down the probability that the student visited Germany last week. [1]

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6) There are 600 pupils at Prestfield School; 55% of them are boys.

a) How many boys are at Prestfield School? [2]

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168 pupils are in the Sixth Form.

b) What percentage of pupils are in the Sixth Form? [2]

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SAMPLE

Remember to show your working

7) Solve the following equations:

a) $5a - 2 = 28$ ..... [2]

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b) $4(3d + 1) = 3(2d + 3)$ ..... [3]

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c) $\frac{2e + 5}{3} = 6$ ..... [3]

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8) 20 pupils scored goals for their school hockey teams last month. The table gives information about the number of goals they scored.

Goals scored	Number of pupils	
1	8	
2	4	
3	6	
4	2	

Work out the mean number of goals scored. [3]

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SAMPLE

Remember to show your working

9) a) Find the size of angle B. [1]

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b) Explain why ABC is an equilateral triangle. [1]

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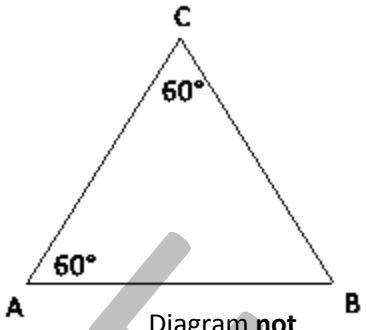


Diagram **not** drawn to scale

10) ABC is a straight line and BD = CD.

Work out the size of angle x°, giving reasons for you [3]

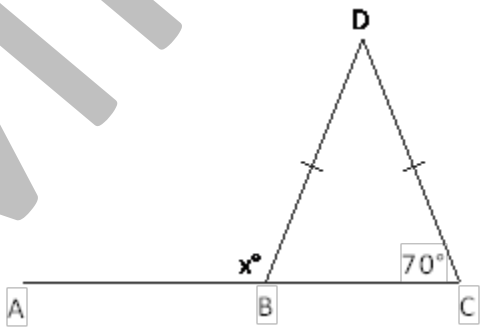
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Diagram **not** drawn to scale



11) AB is parallel to CD.

Find the size of angles x° and y°. [2]

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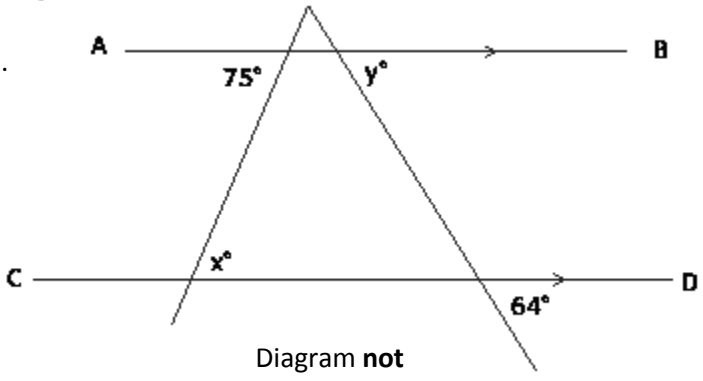


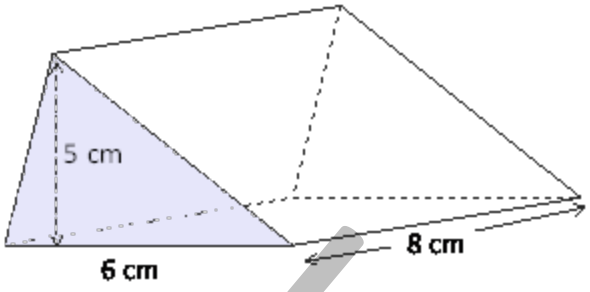
Diagram **not** drawn to scale

SAMPLE

Remember to show your working

12) The diagram shows a triangular prism. Its cross section is shaded.

a) What is its cross sectional area? [2]



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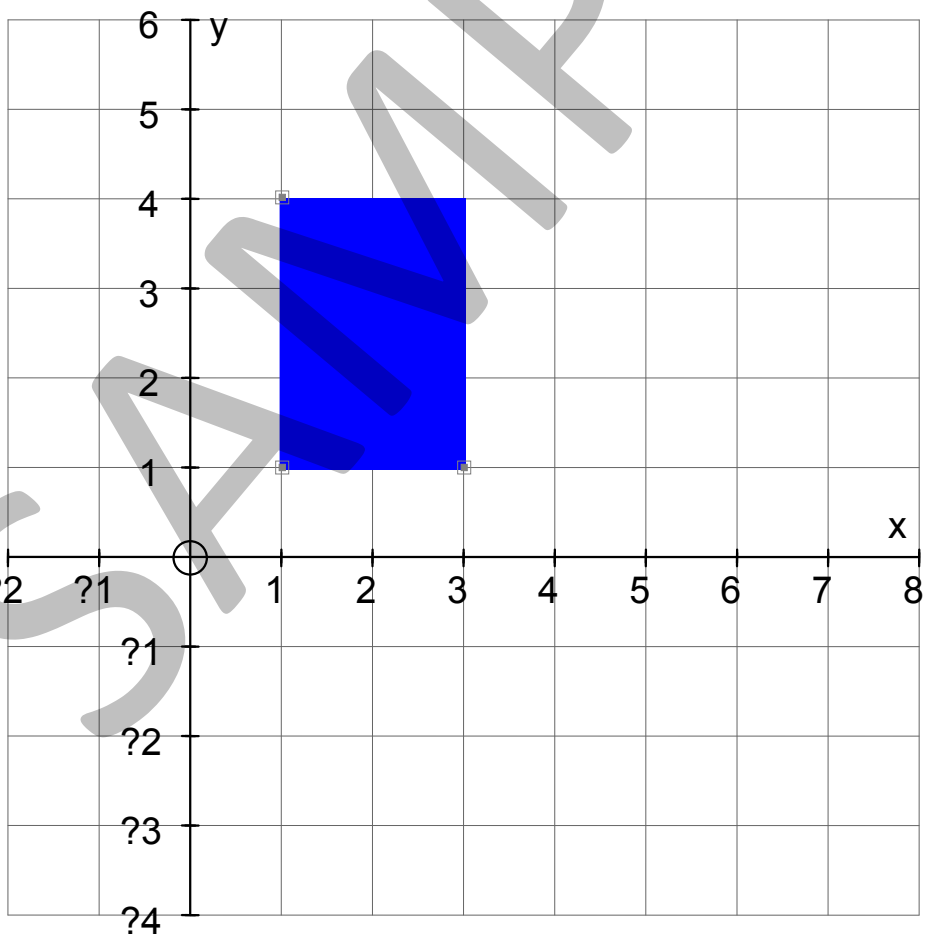
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b) What is its volume? [2]

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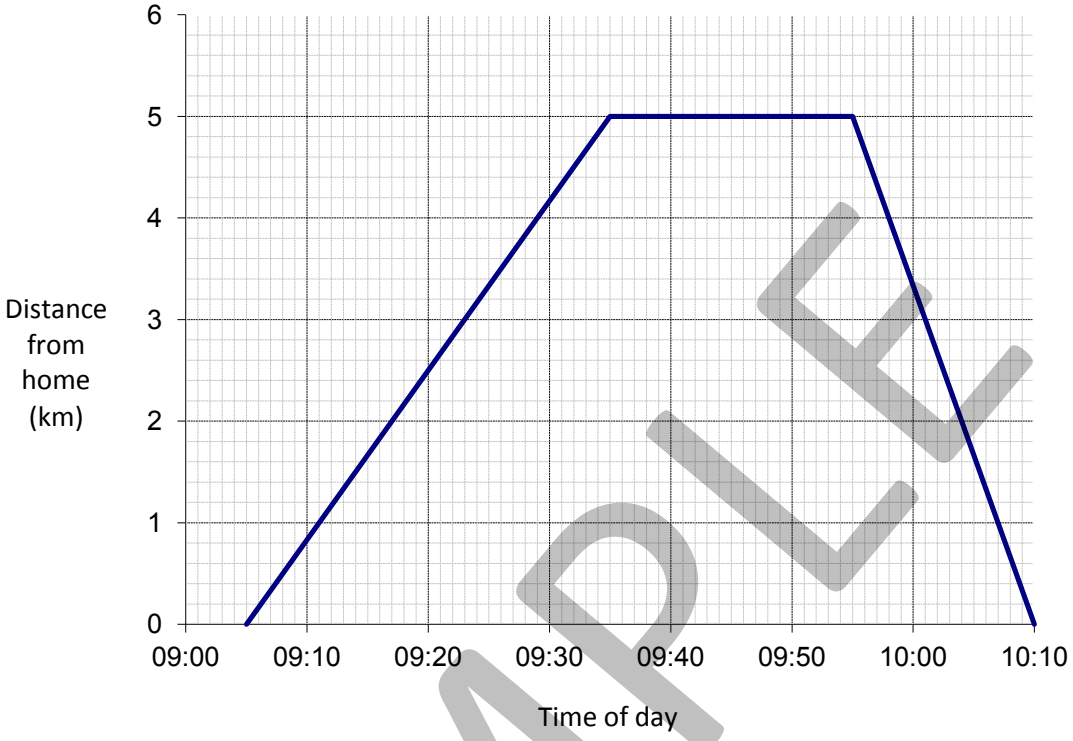
13) Enlarge the shaded triangle by a scale factor of 2, centre (-1,3). [3]



SAMPLE

Remember to show your working

14) Simon cycled from his home to a friend's house, stayed in there for a bit and then cycled home. This is shown in this distance-time graph.



a) When did Simon leave home? [1]

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b) How long was he at his friend's house? [1]

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c) How far did he cycle altogether? [1]

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d) How fast did he cycle on his way to his friend's house? [2]

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e) Did he cycle faster on the way there or on the way back? Give a reason for your answer. [1]

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SAMPLE

Remember to show your working

15) a) Work out the size of the exterior angle of a regular hexagon. [2]

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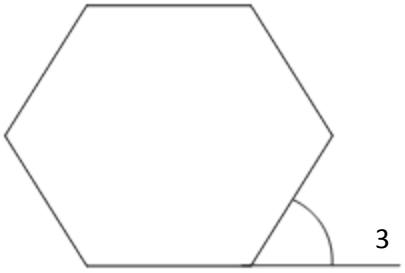


Diagram **not** drawn to scale

The area of the hexagon is 4580 mm^2, correct to 3 significant figures.

b) What is the area in cm^2? [2]

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c) What is the least possible value of the area in mm^2? [1]

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d) What is the greatest possible value of the area in mm^2? [1]

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16) a) Express 135 as the product of its prime factors. [3]

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b) Find the highest common factor (hcf) of 135 and 180. [2]

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SAMPLE

Remember to show your working

17) Calculate the size of the largest angle in the quadrilateral. [4]

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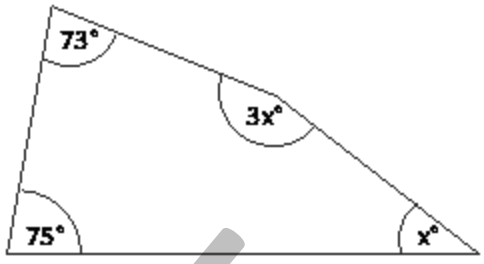


Diagram **not** drawn to scale

18) A diamond ring is bought in 2006. Every year its value increases by 20%. In 2007 it was worth £3000.

a) What was the ring worth in 2009? [4]

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b) What was the ring worth in 2006? [3]

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SAMPLE

END OF EXAMINATION
Now go back and check your answers, and try any questions you may have left out.