Year 8 Mathematics

End Term 4

40 marks

40 mins

Date

Instructions: 1. Answer all questions 2. Calculators permitted

Sample 1

Question 1 (10 marks - 1 mark each)

a) Plot the following points on a set of Cartesian axes:

i) A(2,−1) **ii)** B(−2,1) **iii)** C(−2, −1) **iv)** D(0, 0)

b) **i)** Copy and complete the following table.

ii) Draw a graph of the function.

iii) From the graph, when y = 7, what is x?

x	-2	-1	0	1	2
y = 3x + 1					

c) **i)** Plot the points and write a mathematical model.

ii) How much in the bank after 6 weeks?

iii) How long will it take to have a balance of $850?

Weeks (w)	1	2	3	4
Bank balance ($S)	150	250	350	450

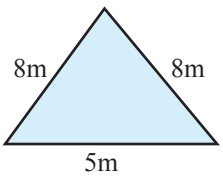
Question 2 (9 marks - 1 each)

a) Convert:

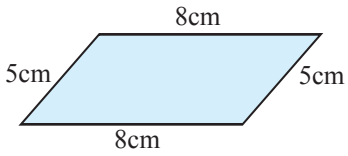
i) 4.5 metres to centimetres. **ii)** 24.23 kilometres to metres. **iii)** 7650 metres to kilometres.

b) Calculate the perimeter of each of the following shapes:

i)

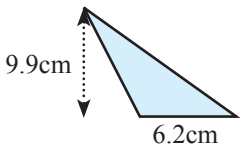


ii)

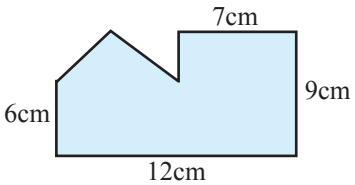


c) Calculate the area of each of the following shapes:

i)

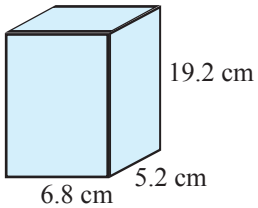


ii)

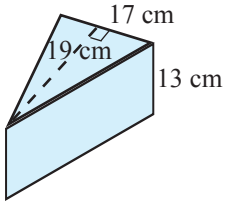


d) Find the volume of each of the following prisms:

i)



ii)



Question 3 (10 marks - 1 each)

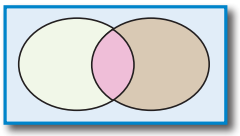
a) In a class of 25 students, 10 students study music, 12 students study PE, and 6 students study music and study PE. Draw a Venn Diagram and find the probability that a student:

i) studies music and PE.

ii) studies music or PE.

iii) does not study music.

iv) does not study PE.



b) Assuming that the chances of a girl or boy being born is equal, use a Two-Way Table to determine the theoretical probabilities for a family of two children:

i) P(2 girls).

ii) P(1 girl and 1 boy).

iii) P(2 boys).

c) A coin is tossed and a die is rolled. Use a Two-Way Table to calculate the probability of obtaining:

i) a tail and a 4.

ii) a head and a 1.

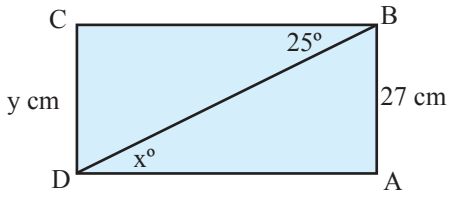
iii) a tail and an odd number.

Die \ Coin	H	T
1		
2		
3		
4		
5		
6		

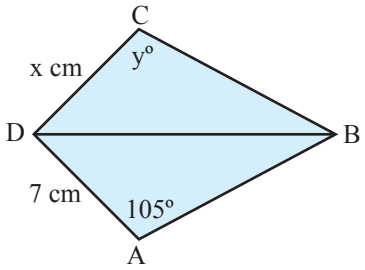
Question 4 (11 marks)

a) Find the unknowns (each pair of triangles are congruent):

i)



ii)



(2 each)

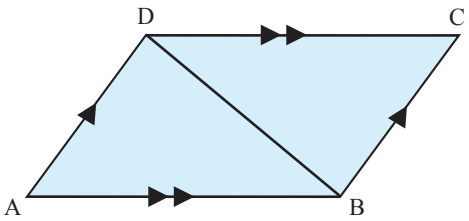
b) For the given parallelogram ABCD:

i) Prove that the diagonal DB cuts the parallelogram into two congruent triangles. (1)

ii) Prove that the opposite sides, AD and BC are equal. (2)

iii) Prove that the opposite angles are equal. (2)

iv) Prove that the diagonals bisect each other. (2)



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Year 8 Mathematics

End Term 4

40 marks

40 mins

Date

Instructions: 1. Answer all questions 2. Calculators permitted

Sample 2

Question 1 (10 marks - 1 mark each)

a) Plot the following points on a set of Cartesian axes:

i) A(4,−1) **ii)** B(−3,2) **iii)** C(−3, −1) **iv)** D(0, 0)

b) **i)** Copy and complete the following table.

ii) Draw a graph of the function.

iii) From the graph, when y = ⁻3, what is x?

x	-2	-1	0	1	2
y = 2x + 1					

c) **i)** Plot the points and write a mathematical model.

ii) How much in the bank after 7 weeks?

iii) How long will it take to have a balance of $1000?

Weeks (w)	1	2	3	4
Bank balance ($S)	200	250	300	350

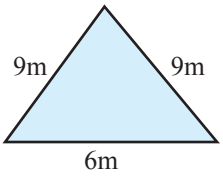
Question 2 (9 marks - 1 each)

a) Convert:

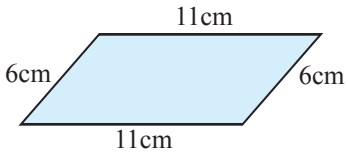
i) 6.2 metres to centimetres. **ii)** 36.1 kilometres to metres. **iii)** 10 450 metres to kilometres.

b) Calculate the perimeter of each of the following shapes:

i)

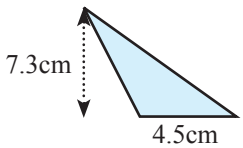


ii)

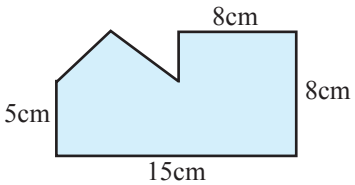


c) Calculate the area of each of the following shapes:

i)

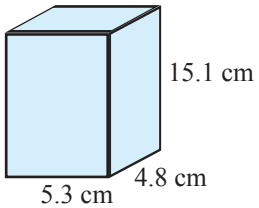


ii)

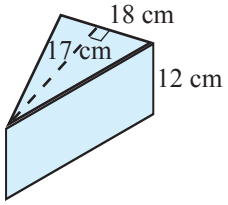


d) Find the volume of each of the following prisms:

i)



ii)



Question 3 (10 marks - 1 each)

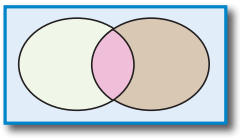
a) In a class of 25 students, 12 students study music, 18 students study PE, and 7 students study music and study PE. Draw a Venn Diagram and find the probability that a student:

i) studies music and PE.

ii) studies music or PE.

iii) does not study music.

iv) does not study PE.



b) Assuming that the chances of a girl or boy being born is equal, use a Two-Way Table to determine the theoretical probabilities for a family of two children:

i) P(2 girls).

ii) P(1 girl and 1 boy).

iii) P(2 boys).

c) A coin is tossed and a die is rolled. Use a Two-Way Table to calculate the probability of obtaining:

i) a head and a 5.

ii) a tail and a 2.

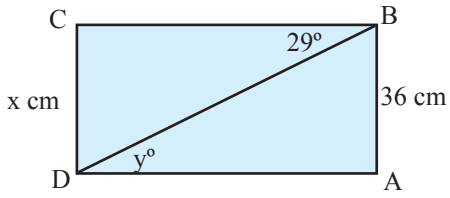
iii) a tail and an even number.

	Coin: H	Coin: T
Die: 1		
Die: 2		
Die: 3		
Die: 4		
Die: 5		
Die: 6		

Question 4 (11 marks)

a) Find the unknowns (each pair of triangles are congruent):

i)



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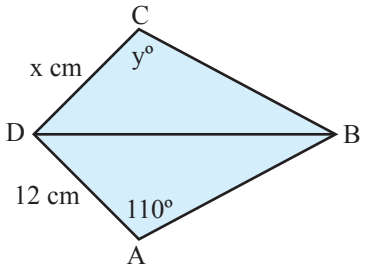

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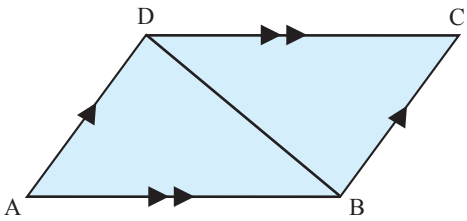

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