Measurement & Geometry

Question 1 **(5 marks)**

Marcus is building a rectangular vegetable garden that measures 4.5 m long and 3 m wide.

(a) Calculate the perimeter of the garden. (2 marks)

(b) Calculate the area of the garden. (1 mark)

(c) A triangular herb bed is attached along the 3 m side of the garden. The triangular bed has a base of 3 m and a height of 2 m. Calculate the area of the triangular herb bed. (2 marks)

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Question 2 **(6 marks)**

(a) A cereal box in the shape of a rectangular prism has length 20 cm, width 8 cm and height 30 cm. Calculate the volume of the cereal box, in cm^3. (2 marks)

(b) The following parts are not related to the cereal box above. Two angles meet on a straight line. One of the angles is 112°. Calculate the size of the other angle. (2 marks)

(c) Two straight lines cross each other. One of the angles formed is 73°. State the size of the angle vertically opposite it, and explain how you know. (2 marks)

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Number & Algebra

Question 3 **(5 marks)**

Calculate the following without using a calculator.

(a) Calculate (−8) + (−5) − (−10). (2 marks)

(b) Calculate $\frac{3}{4} + \frac{1}{8}$, giving your answer as a single fraction. (2 marks)

(c) Calculate 2.7 × 4. (1 mark)

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Question 4 **(6 marks)**

(a) Maya tutors at Top Ranked Tutoring. Let a stand for the number of hours she tutors, and let b stand for the number of students she has in a group. Simplify $5a + 3b - 2a + b$ by collecting like terms. (2 marks)

(b) Maya's pay in dollars for a shift can be modelled by $3a + 7$. Calculate her pay if $a = 4$. (2 marks)

(c) The following part is not related to Maya's tutoring above. Solve the equation $2x + 5 = 17$ for x. (2 marks)

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Statistics & Probability

Question 5 **(4 marks)**

Priya recorded how much pocket money she saved each week, over 5 weeks: \$8, \$12, \$8, \$15, \$7.

(a) Calculate the mean amount Priya saved per week. (2 marks)

(b) State the mode of this data set. (1 mark)

(c) Calculate the range of this data set. (1 mark)

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Question 6 **(5 marks)**

A jar contains 5 red lollies, 3 blue lollies and 2 green lollies. Mia picks one lolly from the jar at random, without looking.

(a) What is the probability that Mia picks a blue lolly? Give your answer as a fraction. (2 marks)

(b) What is the probability that Mia picks a lolly that is NOT green? Give your answer as a fraction in simplest form. (2 marks)

(c) How many more red lollies are there than green lollies? (1 mark)

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