

Max's Geometry Garden: An Angles Assessment

Learning objective: To identify, estimate, measure, and calculate angles within shapes and around points.

Use a protractor and a sharp pencil to complete this assessment. Ensure your units are accurate. Show your working out for all calculation questions.

Max the monkey is designing a geometric garden. He has laid out paths that intersect at various angles. He needs your help to calculate the missing measurements to ensure his flowerbeds are perfectly aligned.

Word bank: acute · obtuse · reflex · right angle · protractor · degrees · vertex · straight line

1. Max has a corner of a flowerbed that measures 45 degrees. Identify the type of angle and explain why it is classified this way. (2 marks)

2. Using your protractor, measure the angle formed between the two paths on the diagram provided below. Label the angle in degrees. (2 marks)

3. A path forms a straight line. If one side of a dividing fence creates a 35-degree angle, calculate the size of the remaining angle on the other side of the fence. (3 marks)

4. Max creates a point where four angles meet. Three of the angles measure 90, 85, and 95 degrees. Calculate the size of the fourth angle and justify your answer using your knowledge of angles around a point. (4 marks)

5. Compare and contrast an obtuse angle and a reflex angle. Provide an example measurement for each to support your answer. (4 marks)

6. Max wants to build a triangular garden frame. He says, 'If one angle is 60 degrees and another is 70 degrees, the final angle must be 50 degrees.' Do you agree? Justify your mathematical reasoning. (2 marks)

7. Max is planning a new circular pond. He wants to place stepping stones at specific intervals. If he divides the full turn of the pond (360 degrees) into 8 equal sections, what is the size of each angle? Explain why this symmetry is important for his garden design. (5 marks)

Draw: Draw a composite shape that contains one acute angle, one obtuse angle, and one reflex angle. Label each angle clearly.



Extension challenge: Total: /25. Imagine Max wants to design a path that turns at a reflex angle of 280 degrees. If he is walking along the path, describe the physical movement he must make to complete this turn. What might happen if he miscalculates this angle by 20 degrees?