

y6math1 Hard

15 Difficult Worded Problems

Show all working out in the space provided.

Name: _____ Date: _____ Score: _____ / 15

Question 1:

In a triangle, one angle is 35° and another is 78° . What is the size of the third angle? Is this triangle acute, right, or obtuse? Explain your reasoning.

Working out:

Question 2:

A straight line is divided into three angles. The first angle is 42° , the second is 87° . What is the third angle? If the line is extended to form a full revolution, what would the total of all three angles around the point be?

Working out:

Question 3:

Two angles are vertically opposite. One angle is measured as $(3x + 15)^\circ$ and the other as 96° . Find the value of x and then determine the size of both angles.

Working out:

Question 4:

A quadrilateral has interior angles of 85° , 92° , and 110° . What is the size of the fourth interior angle? Could this shape be a parallelogram? Justify your answer.

Working out:

Question 5:

Angle A and Angle B are supplementary. Angle A is 24° more than twice Angle B. Find the size of both angles.

Working out:

Question 6:

At 4:15 on a clock face, calculate the angle between the hour hand and the minute hand. Show all working clearly.

Working out:

Question 7:

A regular pentagon is drawn inside a circle. What is the size of each interior angle of the pentagon? Explain how the interior and exterior angles are related.

Working out:

Question 8:

A ladder leans against a wall, making an angle of 68° with the ground. The ladder is 6 metres long. How far up the wall does the ladder reach? Round your answer to one decimal place and show your working.

Working out:

Question 9:

A triangle has interior angles in the ratio $2 : 3 : 4$. Find the size of each angle. Classify the triangle by its angles.

Working out:

Question 10:

Angle P and Angle Q are complementary. Angle P is four times larger than Angle Q. Find both angles. If Angle P is increased by 15° , are the angles still complementary? Explain.

Working out:

Question 11:

A ship sails 50 km east, then 30 km north. What is the bearing from the starting point to the final position? Give your answer correct to one decimal place.

Working out:

Question 12:

A regular octagon is placed inside a square so that four of its vertices touch the sides of the square. If the square has side length 20 cm, what is the side length of the octagon? Show your method.

Working out:

Question 13:

Two lines intersect, creating four angles. The sum of two adjacent angles is 180° . If one angle is 115° , find the other three angles. Prove that vertically opposite angles are equal using these values.

Working out:

Question 14:

A park has a triangular section with side lengths 120 m, 150 m, and 90 m. Determine whether this triangle is acute, right, or obtuse. Find the area of the triangular section using an appropriate formula.

Working out:

Question 15:

A wheel is divided into 8 equal sections. Through what angle does the wheel rotate when it turns through 3 and a half sections? Express your answer in degrees and as a fraction of a full turn.

Working out:
