

# 11+ Practice Test Answers

## 11+ Maths Test 9

Question	Answer	Explanation	Marks
1	Regular pentagon	<p>To make a regular pentagon, all sides must be of equal length. However, Amir only has pieces of wood with lengths 12 cm and 15 cm.</p> <p>He can make an isosceles triangle using two 12 cm pieces and one 15 cm piece (<math>12 + 12 &gt; 15</math>).</p> <p>A rectangle can be made using two 12 cm pieces and two 15 cm pieces.</p> <p>A rhombus can be made using four 12 cm pieces.</p> <p>Therefore, the only shape that is impossible for Amir to make with the given pieces of wood is a regular pentagon.</p>	1
2	640	<p>To find the number of cupcakes of each flavour, we simply need to divide the total number of cupcakes made by the number of different flavours (<math>3\ 200 \div 5 = 640</math>).</p> <p>Hence, the bakery made 640 cupcakes of each flavour.</p>	1
3	£1.40	<p>To calculate the mean price, we need to add up all the prices and divide by the number of prices.</p> $£1.25 + £1.50 + £1.35 + £1.60 + £1.30 = £7.00$ <p>There are 5 prices in total.</p> $£7.00 \div 5 = £1.40$ <p>Therefore, the mean price of a loaf of bread is £1.40.</p>	1
4	25	<p>To find out how many complete bracelets Amelia can make, we need to divide the total number of beads she has by the number of beads required for each bracelet.</p> <p>Amelia has 300 beads in total.</p> <p>Each bracelet requires 12 beads.</p> $300 \div 12 = 25$ <p>Therefore, Amelia can make 25 complete bracelets with the beads she has.</p>	1

5	52	<p>To find the number of chocolate chips needed, we need to substitute the value of <math>e</math> into the given formula.</p> <p>Given:</p> $c = 4(2e + 3)$ $e = 5$ <p>Step 1: Substitute <math>e = 5</math> into the formula.</p> $c = 4(2 \times 5 + 3)$ <p>Step 2: Simplify the expression inside the parentheses.</p> $c = 4(10 + 3)$ $c = 4(13)$ <p>Step 3: Multiply the values.</p> $c = 52$ <p>Therefore, the baker will need 52 chocolate chips to make the batch of cookies.</p>	1
6	4.5 km	<p>To convert metres to kilometres, we need to divide the number of metres by 1 000.</p> $4\,500 \text{ metres} = 4\,500 \div 1\,000 \text{ kilometres}$ $4\,500 \div 1\,000 = 4.5 \text{ kilometres}$ <p>Therefore, 4 500 metres is equal to 4.5 kilometres.</p>	1
7	4 188.79 cm <sup>3</sup>	<p>To find the total volume of the sculpture, we need to calculate the volume of one sphere and then multiply it by the number of spheres.</p> <p>The formula for the volume of a sphere is: <math>V = (4/3) \times \pi \times r^3</math></p> <p>Given:</p> <ul style="list-style-type: none"> <li>- The radius (<math>r</math>) of each sphere is 5 cm</li> <li>- There are 8 spheres in total</li> </ul> <p>Step 1: Calculate the volume of one sphere</p> $V = (4/3) \times \pi \times 5^3$ $V \approx (4/3) \times 3.14 \times 125$ $V \approx 523.60 \text{ cm}^3$ <p>Step 2: Calculate the total volume of the sculpture</p> <p>Total volume = Volume of one sphere <math>\times</math> Number of spheres</p> $\text{Total volume} = 523.60 \text{ cm}^3 \times 8$ $\text{Total volume} = 4\,188.79 \text{ cm}^3 \text{ (rounded to 2 decimal places)}$ <p>Therefore, the total volume of Sarah's sculpture is approximately 4 188.79 cm<sup>3</sup>.</p>	1

8	4	<p>To find the number of students left without a group, we need to find the remainder when 1734 is divided by 6.</p> $1734 \div 6 = 289 \text{ remainder } 4$ <p>This means that there will be 289 groups of 6 students, and 4 students will be left without a group.</p> <p>Therefore, the correct answer is 4.</p>	1
9	607 cm	<p>To find out how much wood Amir has left, we need to subtract the length of the piece he cut off from the original length of the wood.</p> <p>Original length of wood: 850 cm Length of piece cut off: 243 cm</p> $850 \text{ cm} - 243 \text{ cm} = 607 \text{ cm}$ <p>Therefore, Amir has 607 cm of wood left after cutting off a piece for the shelf.</p>	1
10	2 014.824	<p>To find the total weight of bread sold in a week, we need to multiply the number of loaves sold by the weight of each loaf.</p> <p>Number of loaves sold: 5,012 Weight of each loaf: 0.402 kg</p> $5,012 \times 0.402 = 2,014.824 \text{ kg}$ <p>To calculate this, we can use the same method as in the original question:</p> $5,012 \times 0.402 = (5,012 \times 402) \div 1,000 = 2,014,824 \div 1,000 = 2,014.824 \text{ kg}$ <p>Therefore, the total weight of bread sold in a week is 2,014.824 kg.</p>	1