







Question 1	What percentage of the whole numbers from 4 to 23 inclusive are exact multiples of 4?	 Enterprising Mathematics in Scotland
		Answer


Question 9	<p>Jerry goes shopping one Saturday afternoon. In the first shop he spends one third of his money. In the second shop he spends one fifth of the remaining money. On his return home he has £15.36 left.</p> <p>How much did he have to start with?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 17	<p>A bag contains 20 marbles coloured red, white, purple or blue. There are two more red than white, 4 more white than purple and 2 more purple than blue.</p> <p>How many red marbles are there in the bag?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 25	Calculate the size of the smaller angle between the hands of a clock when the time is 10 minutes to 7?	 Enterprising Mathematics in Scotland
		Answer


Question 2	What is the value of $(0.2)^2 - (0.3)^3$?	 Enterprising Mathematics in Scotland
		Answer


Question 10	<p>In a quadrilateral, the sizes of the interior angles form a sequence in which each angle is 10° larger than the previous angle.</p> <p>What is the largest angle in the quadrilateral?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 18	<p>Salad dressing contains olive oil to vinegar in the ratio 3:4.</p> <p>How much of this dressing should be mixed with 1 litre of olive oil to make a new dressing with equal amounts of oil and vinegar?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 26	<p>The lengths, in cm, of the sides of a triangle are in the ratio 3:4:5.</p> <p>The perimeter of the triangle is 60 cm.</p> <p>What is the difference, in cm, between the largest and smallest sides?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 3	<p>Jane, Peter and Matthew each take 3 vitamin tablets every day.</p> <p>Paul takes 2 tablets every day.</p> <p>A bottle contains enough tablets to last the four friends 32 days.</p> <p>How long would the bottle last if every one of the four took two tablets every day?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 11	<p>If $\frac{1}{x} = \frac{2}{5} + \frac{5}{2}$ what is the value of x?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 19	<p>If $x + y = 5$, $y + z = 7$, $x + z = 6$ then what is the value of xyz?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 27	<p>For integers x and y define $x * y = x^y + y^x$.</p> <p>If $x * 3 = 145$, what is the value of x?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 4	<p>A farmer has a field of area three and one quarter acres. In this field he planted turnips in two and five eighths acres and swedes in the remaining area.</p> <p>How many acres did the Swedes occupy?</p>	 Enterprising Mathematics in Scotland
		Answer

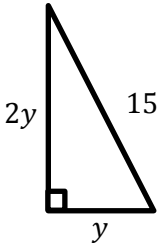

Question 12	<p>What is the value of $\frac{\frac{1}{3} + \frac{1}{6}}{1 - \left(\frac{1}{3}\right)\left(\frac{1}{6}\right)}$</p>	 Enterprising Mathematics in Scotland
		Answer


Question 20	<p>If $a + b = 32$, $b + c = 46$, $a + c = 58$, what is the value of c?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 28	<p>Solve the equation $\frac{1}{x-6} = 0.04$</p>	 Enterprising Mathematics in Scotland
		Answer


Question 5	<p>Three people share their lottery winnings in the ratio of 5:4:2.</p> <p>Sally receives £2 500 000, which is the smallest of the three shares.</p> <p>What was the total amount of money won?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 13	<p>Boris the beetle climbed a tree at a uniform rate.</p> <p>At 9 a.m. he was one eighth of the way up the tree.</p> <p>At 11 a.m. he was four fifths of the way up.</p> <p>What fraction of the tree had Boris climbed by 10.30 a.m.?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 21		<p>In the right angled triangle shown, one side has twice the length of another.</p> <p>What is the area, in square units, of the triangle?</p>	 Enterprising Mathematics in Scotland
			Answer

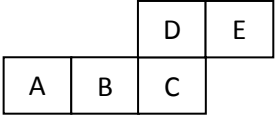

Question 29	<p>A dancing troupe stand evenly placed around a circle.</p> <p>The members of the troupe are numbered consecutively from 1.</p> <p>Dancer 14 is directly opposite dancer 61.</p> <p>How many dancers are there in the troupe?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 6	<p>A suitcase in the shape of a cuboid measures $90\text{ cm} \times 70\text{ cm} \times 50\text{ cm}$.</p> <p>Given that one cubic centimetre equals one millilitre, calculate the volume, in litres of the suitcase.</p>	 Enterprising Mathematics in Scotland
		Answer


Question 14	<p>Marco spent £5.10 on 4 pens and 10 rulers.</p> <p>Jessica spent £5.35 on 2 pens and 13 rulers.</p> <p>Calculate the cost of one pen?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 22	<p>If the length of a rectangle is tripled and the width is quadrupled, what is the percentage increase in its area?</p>	 Enterprising Mathematics in Scotland
		Answer

Question 30	<p>A circular tablecloth has a border which is a narrow strip of lace.</p> <p>How much longer a strip of lace will be required for the border of a second tablecloth whose diameter is 30cm longer than that of the first cloth?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 7		<p>When the shape on the left is folded to make an open box so that it sits on a table with the opening on the top, which letter is on the table?</p>	 Enterprising Mathematics in Scotland
			Answer


Question 15	<p>How many digits are there in 3^{10} ?</p>	 Enterprising Mathematics in Scotland
		Answer


Question 23	<p>A cube of side 5 cm has its external faces painted red. It is then cut into 125 unit cubes. How many of the unit cubes have exactly one red face?</p>	 Enterprising Mathematics in Scotland
		Answer

Question 31	<p>Find the value of $\left(\frac{9}{18}\left(2.25 \times \frac{12}{81}\right) + 4\frac{10}{12}\right)^2$</p>	 Enterprising Mathematics in Scotland
		Answer

Question 8	<p>Three people share a sum of money in the ratio 3 : 2 : 1. The person who receives the least amount gets £700. What was the total amount shared?</p>	
		Answer

Question 16	<p>What is the value of $\frac{1}{\sqrt{1+x^2}}$ when $x = \frac{2}{3}$?</p>	 Enterprising Mathematics in Scotland
		Answer

Question 24	<p>Pablo asked his Grandpa what age he was. Grandpa, being somewhat mathematical said "If you take a cuboid, multiply the number of edges by 6, and then add the result to three times the number of faces and finally subtract twice the number of vertices, then you have my age." What age is Grandpa?</p>	 Enterprising Mathematics in Scotland
		Answer

Question 32	<p>The three vertices of a parallelogram are (4, -2), (0,-4) and (-2,1) are (clockwise, in order) What are the coordinates of the fourth vertex?</p>	 Enterprising Mathematics in Scotland
		Answer