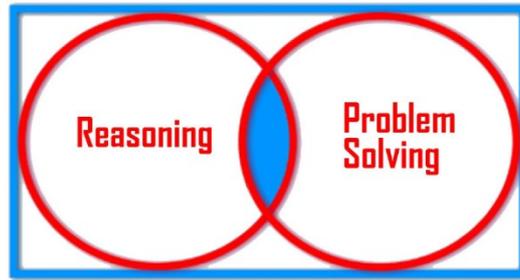


## GCSE Foundation (5 – 1)



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### Mathematical Reasoning Questions

#### (Percentages) – Set 1

**The marks shown are for guidance purposes only  
[Total marks: 17 Marks]**

<p><b>1</b></p>	<p>Rudolf wants to increase 78kg by 15%. Which of the following will give the correct answer? Choose all the correct answers.</p> <p>a) <math>15\% \times 78</math> b) <math>1.15 \times 78</math> c) <math>15\% \times 78 + 78</math> d) <math>0.15 \times 78 + 78</math></p> <p style="text-align: right;"><b>[2Marks]</b></p>
<p><b>2</b></p>	<p>Irena is going to find 20% of £250. She writes <math>10\% \text{ of } £250 = 250 \div 10</math> Therefore <math>20\% \text{ of } £250 = 250 \div 20</math> Explain why Irena's calculation for 20% is wrong.</p> <p style="text-align: right;"><b>[1Mark]</b></p>
<p><b>3</b></p>	<p>Answer <b>True</b> or <b>False</b> to the following statements</p> <p>a) <math>33\frac{1}{3}\% = \frac{1}{3}</math></p> <p>b) <math>\frac{2}{5}</math> of 50m = <math>\frac{2}{5}\%</math> of 50m</p> <p>c) <math>20\% \text{ of } \frac{1}{4} = 0.2 \times 0.4</math></p> <p style="text-align: right;"><b>[3Marks]</b></p>

<p><b>4</b></p>	<p>Write down a single calculation which represents  30% of 30% of <math>\frac{1}{2}</math> of £280</p> <p style="text-align: right;"><b>[1Mark]</b></p>
<p><b>5</b></p>	<p>A house costs £180,000.  During 2016, the value of the house increased by 8%  During 2017, the value of the house fell by 2%  Choose the single calculation which gives the current value of the house at the end of 2017</p> <p>a) <math>8\% \times 2\% \times 180,000</math>  b) <math>0.8 \times 0.2 \times 180,000</math>  c) <math>1.8 \times 0.98 \times 180,000</math>  d) <math>1.08 \times 0.98 \times 180,000</math></p> <p style="text-align: right;"><b>[1Mark]</b></p>
<p><b>6</b></p> 	<p>The sides of a rectangle are increased by 10%.  By what percentage will the area increase?  Choose one answer</p> <p>a) 20%  b) 40%  c) 21%  d) 10%</p> <p style="text-align: right;"><b>[2Marks]</b></p>

7	<p>During the first week of birth, the weight of a calf increased by 22% to 55kg. Find the birth weight of the calf.</p> <p><b><u>Here is Crystal's Answer</u></b></p> <p>20% of 55 = 11kg  2% of 55 = 1.1kg  Therefore, the birth weight of the calf is <math>11 + 1.1 = 12.1\text{kg}</math>  Is crystal's answer correct? Explain your answer.</p> <p style="text-align: right;"><b>[1Mark]</b></p>
8 	<p>In <b>Question 7</b> above, show the correct calculation</p> <p style="text-align: right;"><b>[2Marks]</b></p>
9	<p>A new car cost £25000.  During the year, the value of the car depreciated by 11.5%  Write down a calculation to find the current value of the car.</p> <p style="text-align: right;"><b>[2Marks]</b></p>
10 	<p>Jamie is a classic car dealer. At the beginning of 2005, he purchased a 20-year-old Porsche 911 sports car for £55000.  During 2006 and 2007, the value of the car increase by 9% and 11% respectively. At the end of 2008, the car was sold for £60,000  Did the value of the car increase during 2008?  Show how you decide.</p> <p style="text-align: right;"><b>[2Marks]</b></p>