

## Year 10 Higher Questions – Straight Line Graphs

1.	<p>Convert each of the following percentages to fractions, giving your answers in their simplest form.</p> <p>(a) 10%      (b) 80%      (c) 90%      (d) 5%</p>
2.	<p>Convert each of the following percentages to decimals.</p> <p>(a) 32%      (b) 50%      (c) 34%      (d) 20%</p>
3.	<p>Convert the following decimals to percentages.</p> <p>(a) 0.5      (b) 0.74      (c) 0.35      (d) 0.08</p>
4.	<p>Convert the following fractions to percentages.</p> <p>(a) <math>\frac{1}{2}</math>      (b) <math>\frac{7}{10}</math>      (c) <math>\frac{1}{5}</math>      (d) <math>\frac{3}{4}</math></p>
5.	<p>a) The price of a bar of chocolate is 25p and includes 5p profit. Express the profit as a percentage of the price.</p> <p>b) In the crowd at a football match there were 28 000 <i>Manchester United</i> supporters and 22 000 <i>Tottenham</i> supporters. What percentage of the crowd supported each team?</p> <p>c) In a survey of 300 people it was found that 243 people watched <i>EastEnders</i> regularly. Express this as a percentage.</p>
6.	<p>Find</p> <p>(a) 10% of 200      (b) 50% of £5      (c) 20% of £8 (d) 25% of £100      (e) 40% of £500      (f) 90% of 200 (g) <math>33\frac{1}{3}\%</math> of £12      (h) 75% of 800      (i) 75% of 1000</p>

7.	<p>a) Karen bought an antique vase for £120. Two years later its value had increased by 25%. What was the new value of the vase?</p> <p>b) When Wendy walks to school she covers a distance of 1800 m. One day she discovers a short cut which reduces this distance by 20%. How much shorter is the new route?</p> <p>c) A new-born baby girl weighed 4 kg. In the first three months her weight increased by 60%. How much weight had the baby gained?</p>
8.	<p>(a) 32% of £50                      (b) 15% of £83                      (c) 12.6% of £40</p> <p>(d) 4.7% of £30                      (e) 6.9% of £52                      (f) 3.7% of £18.62</p>
9.	<p>a) An ice cream firm sells 20 000 ice-creams during one summer month. They expect sales to increase by 22% in the next month. How many ice-creams do they expect to sell?</p> <p>b) Peter earns £9000 per year in his new job. He does not pay tax on the first £3500 he earns and pays 25% tax on the rest. How much tax does he have to pay?</p> <p>c) Richard and Debbie cancel their holiday at short notice. The travel agents refund 65% of the £420 they had paid. How much money do Richard and Debbie lose?</p>
10.	<p>a) A new car cost £11 500 and one year later it was sold for £9995. Find the percentage reduction in the value of the car.</p> <p>b) After a special offer the price of baked beans was increased from 15p per tin to 21p per tin. Find the percentage increase in the price.</p> <p>c) In a science experiment the length of a spring increased by 4 cm to 20 cm. Find the percentage increase in the length of the spring.</p>

11.	<p>a) The price of a television is £225.60 including 17.5% VAT. What would be the price with no VAT?</p> <p>b) The end of year profits of a large company increased this year by 12% to £90 944. Find the profits made last year.</p> <p>c) A special bottle of washing up liquid contains 715 ml of liquid. The bottle is marked '30% extra free'. How much liquid is there in a normal bottle?</p> <p>d) After one year, the value of a car has fallen by 15% to £8330. What was the value of the car at the beginning of the year?</p>
12.	<p>Jane invests £1200 in a bank account which earns interest at the rate of 6% per annum. Find the value of her investment after:</p> <p>(a) 1 year      (b) 2 years      (c) 5 years.</p>
13.	<p>A sum of £5000 is to be invested for 10 years. What is the final value of the investment if the annual interest rate is:</p> <p>(a) 5%      (b) 4.8%      (c) 7.2%?</p>
14.	<p>A car costs £9000 and depreciates at a rate of 20% per annum. Find the value of the car after 3 years.</p>
15.	<p>The population of a third world country is 42 million and growing at 2.5% per annum.</p> <p>(a) What size will the population be in 3 years' time?</p> <p>(b) In how many years' time will the population exceed 50 million?</p>
16.	<p>The value of a car depreciates at 15% per annum. A man keeps a car for 4 years and then sells it.</p> <p>(a) If the car initially cost £6000, find:</p> <p>(i) its value after 4 years,</p> <p>(ii) the selling price as a percentage of the original value.</p> <p>(b) Repeat (a) for a car which cost £12 000.</p> <p>(c) Comment on your answers.</p>