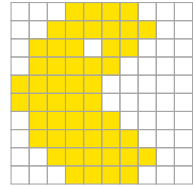


Percentages: Non calculator questions

Q1. A badge for the coding club is drawn as pixel art on a grid of 100 squares. 51 squares are coloured in.



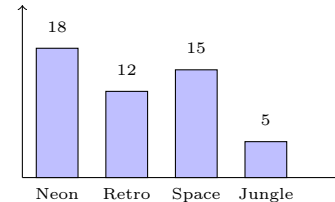
- (a) What percentage of the badge is coloured in? _____
 (b) Write that as a decimal. _____
 (c) Write that as a fraction of the badge. _____

Q2. Fill in the gaps.

- (a) $0.4 = \underline{\hspace{2cm}}\%$ (c) $1.25 = \underline{\hspace{2cm}}\%$ (e) $7\% = \underline{\hspace{2cm}}$
 (b) $0.06 = \underline{\hspace{2cm}}\%$ (d) $45\% = \underline{\hspace{2cm}}$ (f) $130\% = \underline{\hspace{2cm}}$

Q3. 50 pupils voted for the theme of the summer disco.

- (a) What percentage voted for Neon? _____
 (b) What percentage voted for Jungle? _____
 (c) Ravi says “more than half voted for Space or Retro”. Is Ravi right? Explain why or why not, including a calculation to back up your answer.



Q4. Work these out **without** a calculator.

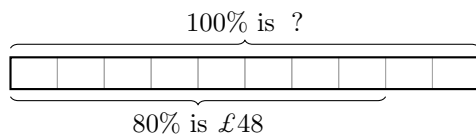
- (a) 10% of 250 _____ (b) 5% of 60 _____ (c) 35% of 80 _____

Q5. Work out the new price of each item.

- (a) Trainers cost £45 and are reduced by 20% in a sale. _____
 (b) A hoodie costs £32 and its price is increased by 25%. _____

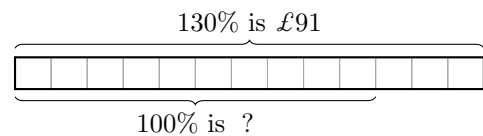
Q6. Use the bar models to find the original prices.

- (a) A coat is reduced by 20% in a sale. It now costs £48.



80% is £48
 10% is _____
 100% is _____

- (b) A gym membership rises by 30% to £91 a month.



What was the membership before the rise?

Q7. Until 2011, VAT in the UK was charged at 17.5%. A bicycle repair cost £64 before VAT. Complete the steps to find the VAT without a calculator.

- 10% is _____
 5% is _____
 2.5% is _____
 17.5% is _____

Q8. A café sells 240 drinks on Saturday. 35% are coffees, 20% are teas and the rest are cold drinks. How many cold drinks are sold?

Q9. A shop raises all of its prices by 20%. A month later it takes 20% off every price in a sale. A customer says:

“The sale takes off exactly what was added on, so the prices are back to what they were before.”

Is the customer right? Use an example price to explain your answer.

Q10. Two shops sell the same headphones, normally £80.

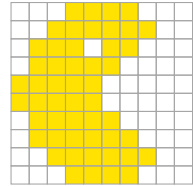
Shop A
 “30% off everything!”

Shop B
 “A quarter off, then £8 off!”

- (a) Which shop is cheaper, and by how much?
 (b) Design a third offer that beats both shops but still charges more than half of the normal price. Explain why it works.
 (c) How much would the headphones have to cost for the two shops to charge the same price?

Percentages: Non calculator questions

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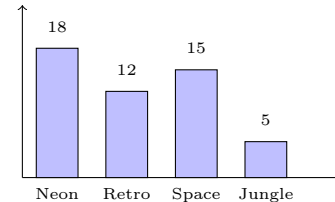
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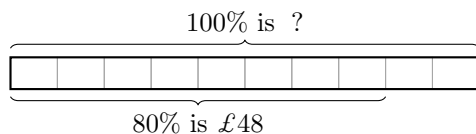
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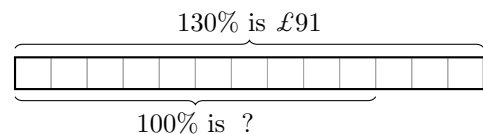
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