

Percentages

Section A

Fill the gaps:

1. To find _____% of something I multiply it by 0.35
2. To find _____% of something I multiply it by 0.98
3. To find _____% of something I multiply it by 0.03
4. To find 53% of something, I multiply it by _____
5. To find 9% of something, I multiply it by _____
6. To find 180% of something, I multiply it by _____
7. To find 53.7% of something, I multiply it by _____
8. Find 34% of 192.
9. Find 8% of 871.
10. Find 104% of 723.
11. Find 14.2% of 400.
12. Find 5.3% of 871.

Solve the following puzzle:



ever wondered why?

START	30	12.5	1.8	20	5	9	25	7.2	3
G	T	O	L	D	K	T	C	O	E
50% of 400	5% of 300	45% OF 40	30% OF 18	75% of 400	5% of 50	25% OF 18	10% of 50	50% OF 18	10% OF 12

150	40	45	90	225	6	2.5	4.5	200	75
S	E	T	I	'	H	T	T	L	N
25% of 300	5% of 400	30% of 300	50% of 50	10% of 300	25% OF 12	25% of 50	10% OF 18	25% of 400	75% of 300

15	1.2	100	300	60	18	5.4
S	B	U	O	E	T	E
15% of 300	60% OF 12	10% of 400	15% of 400	50% of 300	50% OF 12	FINISH

Extension: Move on to section C

Section B

13. What is 17 as a percentage of 30?
14. What is 185 as a percentage of 257?
15. What is 20 as a percentage of 14?
16. What is 28 as a percentage of 46?
17. What is 982 as a percentage of 1000?
18. 42 pupils in a year group of 50 pupils study Latin. What percentage of students study Latin?
19. 28 of my 40 second cousins are female. What percentage of my second cousins are male?
20. Sarah scores 17 out of 20 on a test. What is this as a percentage?

21. In an average school in the UK, 45 out of 187 pupils passed GCSE maths. What was the percentage pass rate?
22. Generalise: what is x as a percentage of y ?
23. A dress has been reduced from £80 to £52 in a sale. What is the new value of the dress as a percentage of its old value?
24. My house has increased in value from £180,000 to £187,200 over the last year. What is the new value as a percentage of the old value?
25. Generalise: If a value increases from p to q , what is the value of q , as a percentage of p ?

Section C

26. Work out 40% of 50. Find 30% of the answer.
27. Work out 30% of 50. Find 40% of the answer.
28. What do you notice?
29. Find 70% of 150
30. Find 130% of the answer.
31. Find what your final answer is as a percentage of 150.
32. Why is this slightly surprising?
33. Find 80% of 240.
34. Find 70% of your answer.
35. Find 50% of 240.
36. Compare your previous two answers. Why might you expect them to be equal? Why aren't they?
37. Choose a number. Find 80% of your number and then find 65% of the result.
38. With the same number, find 65% of the number then find 80% of the result.
39. What do you notice?
40. Find 80% of a number of your choice
41. Find 125% of the answer.
42. Find what your final answer is as a percentage of your original number.
43. Why is this slightly surprising?
44. 80% of a black-and-white photograph of Kanga is black and 20% is white. Kanga's photograph is enlarged to three times its original size. What percentage of the enlarged photograph is white?
45. Even when the camel Charlie is thirsty, 84% of his weight constitutes water. After he drinks, his weight rises to 800kg and the water accounts for 85% of his weight. What is the weight of Charlie when he is thirsty?
46. The area of a sector of a circle is 15% of the area of the whole circle. What is the angle of the sector at the centre of the circle?