



Percentages



- Calculate the following percentages:
 - 10% of 200
 - 50% of 300
 - 60% of 500
 - 75% of 88
 - 5% of 40
 - 150% of 260
 - $12\frac{1}{2}\%$ of 32
 - $33\frac{1}{3}\%$ of 54
 - 16.5% of 27
 - 88% of 1246
 - $66\frac{2}{3}\%$ of 126
 - 121% of 45
- There are 600 students in a school. 65% of the students play sports. How many students play sports?
- Sam earns €550 per week. If he spends 34% of his weekly income on rent, how much is his weekly rent?
- A TV cost €500 before VAT. If the VAT rate is 21% how much is the VAT on the TV?
- A house was bought for €250,000 and sold for a 20% profit. What was the selling price of the house?
- Jim bought a car for €6500, and then sold it for a 40% loss. For what price did he sell the car?
- 50% of a number is 120. What is the original number?
 - 75% of what number is 48?
 - 10% of a number is 6. What is the original number?
 - $33\frac{1}{3}\%$ of what number is 26?
 - 28% of a number is 140. What is the original number?





- (f) $62\frac{1}{2}\%$ of what number is 35?
- (g) 121% of a number is 363. What is the original number?
8. 23% of students in a school play video games. If 69 students in the school play video games, how many students are in the school in total?
9. Brian spends 30% of his monthly income on rent. If his monthly rent is €600, how much does he earn per month?
10. A soccer player scored 78% of his penalties throughout his professional career. If he scored 195 penalties throughout his career, how many penalties did he take?
11. A bill for a dinner, including VAT, amounts to €96.80. If the VAT rate is 21%, what was the price of the dinner before VAT?
12. By selling a house for €364,000, Frank makes a 30% profit. What price did Frank buy the house for?
13. (a) 50% of a number is 44. What is 75% of the original number?
(b) 20% of a number is 56. What is 49% of the original number?
(c) $33\frac{1}{3}\%$ of a number is 96. What is $87\frac{1}{2}\%$ of the original number?
(d) 17% of a number is 51. What is 23% of the original number?
(e) 121% of a number is 605. What is 115% of the original number?
(f) 110% of a number is 44. What is 135% of the original number?
14. In a school, 34% of students get the bus to school and 26% of students walk to school. If 102 students get the bus to school, how many walk?
15. 42% of people in a small town support Fine Gael and 17% support Fianna Fail. If 510 people are Fianna Fail supporters, how many support Fine Gael.
16. In 2015, 45% of students in a school played sports. In 2016, 55% of the students played sports. If 72 students in the school played sports in 2015, how many played sports in 2016? (Assume there was the same number of students in the school in 2016 as in 2015)
17. The price of a television, including 25% VAT, amounts to €437.50. What would the total price amount to if the VAT rate was reduced to 15%?
18. By selling a car for €3500, Timmy sells it for a 30% loss. What selling price would have been a 20% loss?
19. Convert to following fractions to percentages:
- $\frac{1}{2}$
 - $\frac{3}{4}$
 - $\frac{2}{3}$
 - $\frac{2}{5}$





v. $\frac{17}{20}$

20. John got 35 marks out of a total of 50 in an exam. What is his result expressed as a percentage?
21. James plays basketball. In one game he took 18 shots, and he scored 12 of them. Calculate his percentage shooting accuracy.
22. A football team won 24 out of 40 games in a season. What percentage of their games did they win?
23. Tim earns €2500 per month. His mortgage repayments are €900 per month. Express his mortgage repayments as a percentage of his income.
24. In a school of 600 students, 350 are girls. What percentage of the students are girls?
25. It rained on 17 days in September. On what percentage of days in September did it rain?
26. In a class of 35 students, 17 get the bus to school, 8 walk to school, 2 cycle and the remaining students drive. Outline what percentage of students get the bus, walk, cycle and drive to school.
27. What is the percentage increase when 30 is increased to 40?
28. What is the percentage decrease when 40 is decreased to 30?
29. What is the percentage increase when 85 is increased to 100?
30. What is the percentage decrease when 100 is decreased to 85?
31. In 2015, the average house price was €220,000. In 2016 the average house price was €240,000. What was the percentage increase in average house price from 2015 to 2016?
32. A sports club had 320 members in 2015 and 375 members in 2016. What was the percentage increase in members from 2015 to 2016?
33. After an illness, Mary's bodyweight dropped from 90 kg to 72 kg. What was the percentage decrease in her bodyweight?
34. A car was bought for €6500 and sold for €4000. What was the percentage loss?
35. A microwave was bought for €200 and sold for €235. What was the profit, represented as a percentage?

