MATHEMATICS · GRADES 4-6

Understanding percentages

Difficulty level: Intermediate

Mathematics: Grades 4-6

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Overview of the concept

This is how you make sense of percents, like a 20 percent sale, a test score out of 100, or a survey result, because percent always means out of a hundred. A percent is just a number out of a hundred, so 20 percent means 20 out of every 100. That makes percents easy to compare, because they are all measured on the same scale. That is how you read a sale, a test score, or a survey, and know at once whether the number is big or small.



Rule

Percentages: percent means per hundred, so a percentage is a number out of 100.

To write a percentage as a fraction, put it over 100, and to write a fraction as a percentage, work out how many it is out of 100.

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Worked examples

EXAMPLE 1

Q What is 25% of 80?

SOLUTION

This is a percent of a number question, so the one rule to remember is: percent means per hundred, so turn the percent into a fraction of 100 first. 25% is a quarter, and a quarter of a number is the number divided by 4.

$25\% = \frac{25}{100} = \frac{1}{4}$

A quarter of 80 is $80 \div 4 = 20$

EXAMPLE 2

Q Write $\frac{3}{4}$ as a percentage.

SOLUTION

This is the same question type in reverse: to turn a fraction into a percentage, find how many it would be out of 100.

Multiply the top and bottom by 25 to get hundredths: $\frac{3}{4} = \frac{75}{100}$

75 out of 100 is 75%.

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Practice questions

1 What is 10% of 200?

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2 What is 50% of 150?

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3 Write 45% as a decimal.

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4 **Write 60% as a fraction in its lowest terms.**

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5 **What percentage is 25 out of 100?**

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6 **In a school, 70% of the students are girls. What percentage of the students are boys?**

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7 A book costs $200. There is a 15% discount. What is the discount amount?

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8 In an exam, Divya got 30 marks out of 50. What percentage of marks did she get?

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9 What is 75% of 120?

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10 A student says $0.6 = 6\%$. Is that right? Give the correct percentage.

- **A** 6%
- **B** 60%
- **C** 0.6%
- **D** 600%

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ANSWER KEY

1. 20

2. 75

3. 0.45

4. $\frac{3}{5}$

5. 25

6. 30

7. 30

8. 60

9. 90

10. 60%

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