MATHEMATICS · GRADES 7-9

Evaluating expressions

Difficulty level: Intermediate

Mathematics: Grades 7-9

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Overview of the concept

This is how you work out the value of a formula once you know the numbers. A taxi fare formula is just letters until you know the distance, then it gives you the price. The same idea works for any formula, from a recipe cost to a physics calculation. You put the numbers in, and the formula does the rest.



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Worked examples

EXAMPLE 1

Q Evaluate $3x + 2$ when $x = 4$.

SOLUTION

This is a substitute and work out question: put 4 in place of every x, then follow the order of operations.

$3 \times 4 + 2 = 12 + 2$, because multiplication comes before addition.

So the value is 14

EXAMPLE 2

Q Evaluate $2a - 5$ when $a = 7$.

SOLUTION

Put 7 in place of a: $2 \times 7 - 5$

$2 \times 7 = 14$, and $14 - 5 = 9$

So the value is 9

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Practice questions

1 Evaluate $x + 3$ when $x = 5$

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2 Evaluate $4y$ when $y = 6$

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3 Evaluate $5p + 2$ when $p = 0$

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4 Evaluate $a + b$ when $a = 3$ and $b = 4$

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5 Evaluate $2(x + 3)$ when $x = 4$

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6 Evaluate x^2 when $x = 5$

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7 **Evaluate $10 - 2n$ when $n = 3$**

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8 **A taxi fare is $2m - 1$ dollars, where m is the number of kilometres. How much is a 10 kilometre ride?**

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9 **A phone plan costs $5p + 2$ dollars a month, where p is the number of extra gigabytes. How much is the plan when $p = 0$?**

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10 **The temperature is 7 degrees. It falls by y degrees overnight. What is the temperature in the morning when y = 9?**

A –2 degrees

B 2 degrees

C –16 degrees

D 16 degrees

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ANSWER KEY

1. 8

2. 24

3. 2

4. 7

5. 14

6. 25

7. 4

8. $19

9. $2

10. –2 degrees

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