MATHEMATICS · GRADES 7-9

Order of operations with integers

Difficulty level: Intermediate

Mathematics: Grades 7-9

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Overview of the concept

This is how you get the one right answer from a mixed calculation, like a bank balance after deposits, withdrawals, and fees in the same month. A bank statement adds the deposits, takes off the withdrawals, and takes off the fees in a set order, and your balance only comes out right if you follow that same order. A hiker tracking height gained and lost over a day does the same kind of adding and subtracting. When positives and negatives are mixed together, the order you work in is what keeps the answer correct.



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Rule

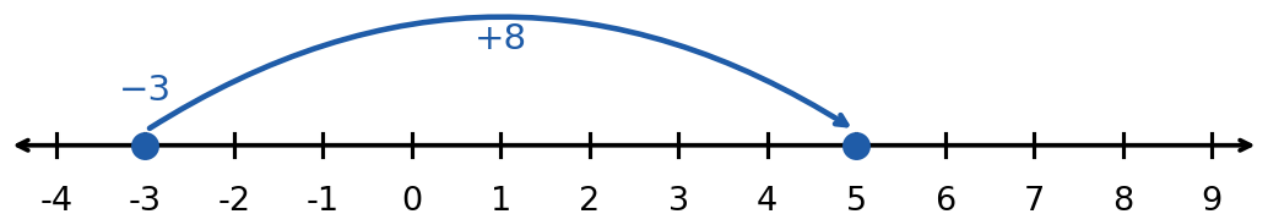
Order of operations: you follow BEDMAS.

BEDMAS stands for Brackets, Exponents, Division and Multiplication, Addition and Subtraction. Work through a calculation in that order. Do the brackets first, then the exponents, then division and multiplication from left to right, then addition and subtraction from left to right.

Worked examples

EXAMPLE 1

Q Work out $-3 + 4 \times 2$



SOLUTION

Multiply before adding: $4 \times 2 = 8$

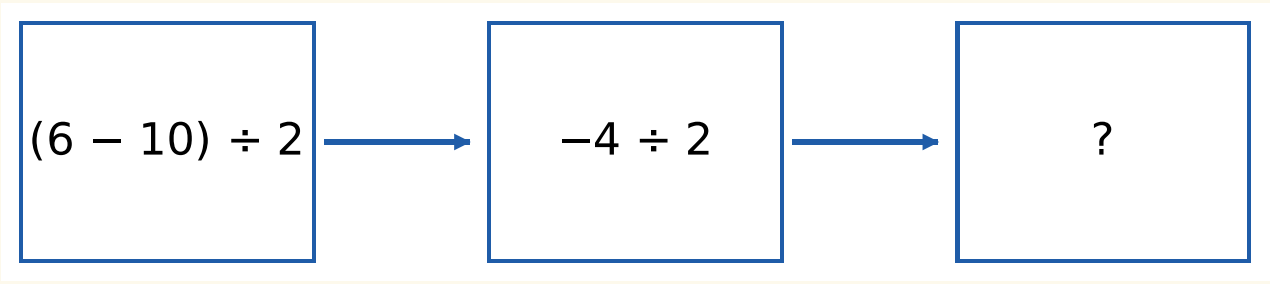
Now the sum is $-3 + 8$.

Different signs, so subtract the smaller number from the larger: $8 - 3 = 5$. Keep the sign of the larger number, which is positive. Answer 5

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EXAMPLE 2

Q Work out (6 – 10) ÷ 2



SOLUTION

Do the brackets first: 6 – 10 = –4

Then divide: –4 ÷ 2 = –2

Signs differ, so the answer is negative. Answer –2

Practice questions

1 **You buy 2 apples and 3 bags with 4 apples in each bag. How many apples do you have?**

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2 You buy 4 bags. Each bag has 2 red apples and 3 green apples. How many apples do you have?

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3 The temperature is -5 degrees, then it rises 2 degrees each hour for 3 hours. What is the new temperature?

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4 You have 10 dollars and buy 2 pens at 3 dollars each. How much money is left?

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5 You have 8 dollars and owe 12 dollars, and the balance is split between 2 friends. What is each share?

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6 The temperature is 0 degrees. It falls 4 degrees each hour for 2 hours, then rises 3 degrees. What is the new temperature?

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7 Work out 6 + 12 ÷ (-3). What is the answer?

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8 A debt of 2 dollars is cancelled 3 times, then you lose 1 dollar. What is your balance change?

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9 A debt of 18 dollars is split between 3 friends, and each friend's share is doubled. What is the doubled share?

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10 You have 5 dollars. A debt of 3 dollars is cancelled twice. How much do you have now?

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ANSWER KEY

1. 14

2. 20

3. 1

4. 4

5. -2

6. -5

7. 2

8. 5

9. -12

10. 11

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