MATHEMATICS · GRADES 7-9

Multiplying integers

Difficulty level: Intermediate

Mathematics: Grades 7-9

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Overview of the concept

This is how you scale up a repeated gain or loss, like several days of the same temperature drop or several weeks of the same savings deposit. The same gain or loss repeated again and again adds up fast, and multiplying integers is how you work out the total in one go. You use it to total a week of savings, to work out a temperature change over several days, or to find the total profit or loss after several identical weeks.



Rule

Multiply the sizes as usual, then set the sign: same signs give a positive answer, and different signs give a negative answer.

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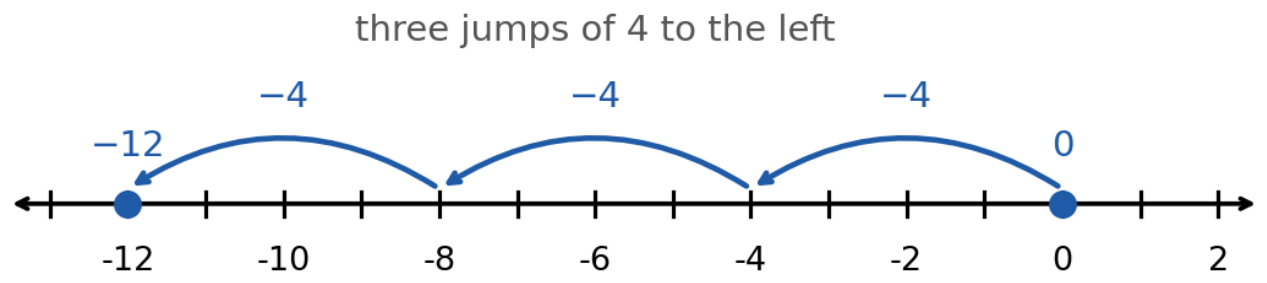
Worked examples

EXAMPLE 1

Q Work out $(-4) \times 3$



SOLUTION

Multiply the sizes: $4 \times 3 = 12$.

The signs differ, so the answer is negative.

So $(-4) \times 3 = -12$

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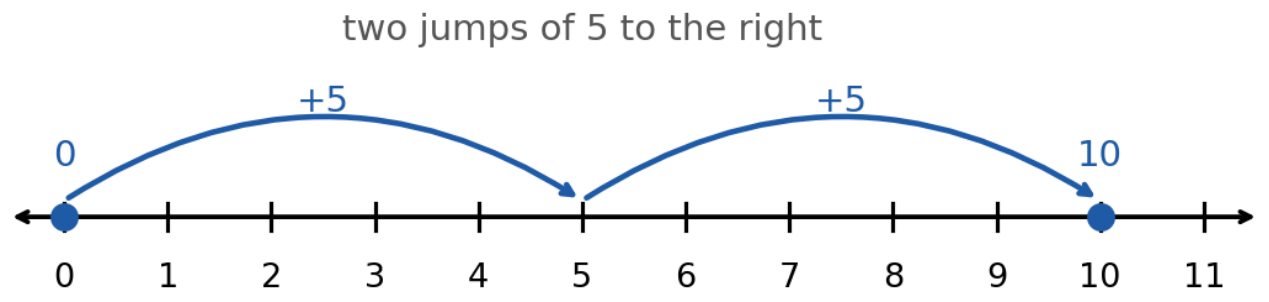
EXAMPLE 2

Q Work out (−5) × (−2)



SOLUTION

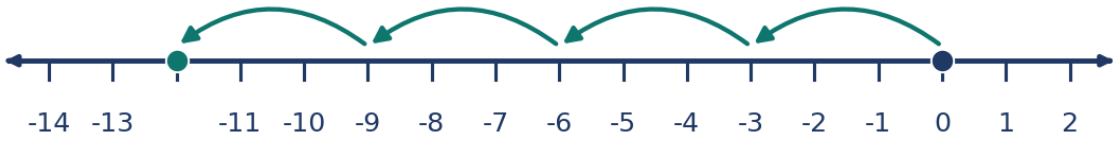
Multiply the sizes: 5 × 2 = 10.

The signs are the same, so the answer is positive.

So (−5) × (−2) = 10

Practice questions

1 The temperature falls 3 degrees each hour for 4 hours. The number line shows the jumps. What is the total change?



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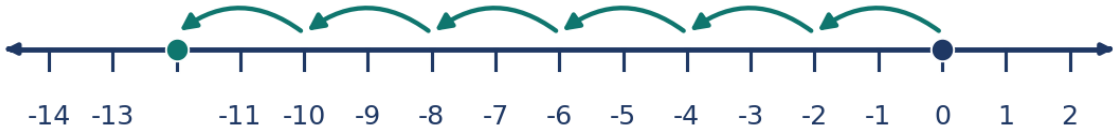
2 A diver descends 2 m each minute for 6 minutes. The number line shows the jumps. What is the total change?



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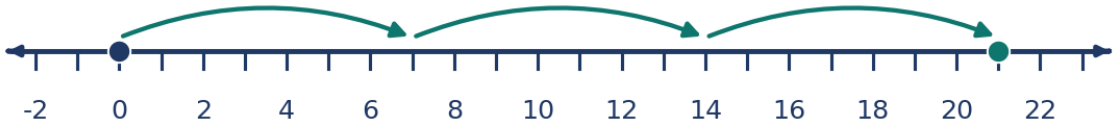
3 Three debts of 7 dollars are cancelled. What is (-7) × (-3)?



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4 You save 8 dollars each week for 5 weeks. The number line shows the jumps. How much have you saved?



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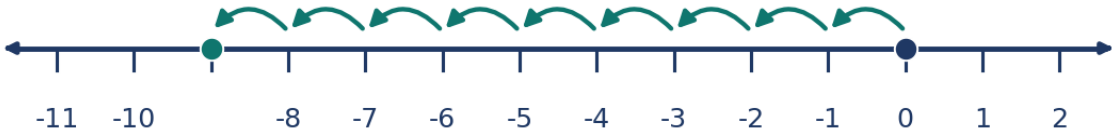
5 The temperature falls 1 degree each hour for 9 hours. The number line shows the jumps. What is the total change?



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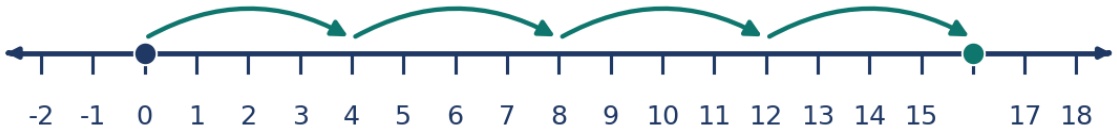
6 A climber gains 4 m each minute for 4 minutes. The number line shows the jumps. What is the total change?



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7 No jumps are made on the number line. What is 0 × (-6)?



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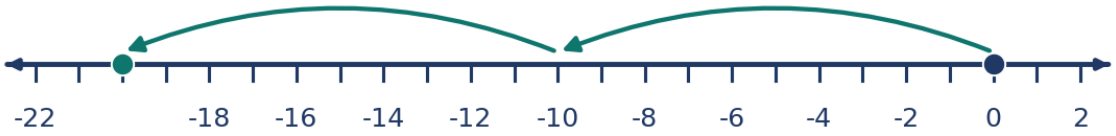
8 A submarine descends 10 m each minute for 2 minutes. The number line shows the jumps. What is the total change?



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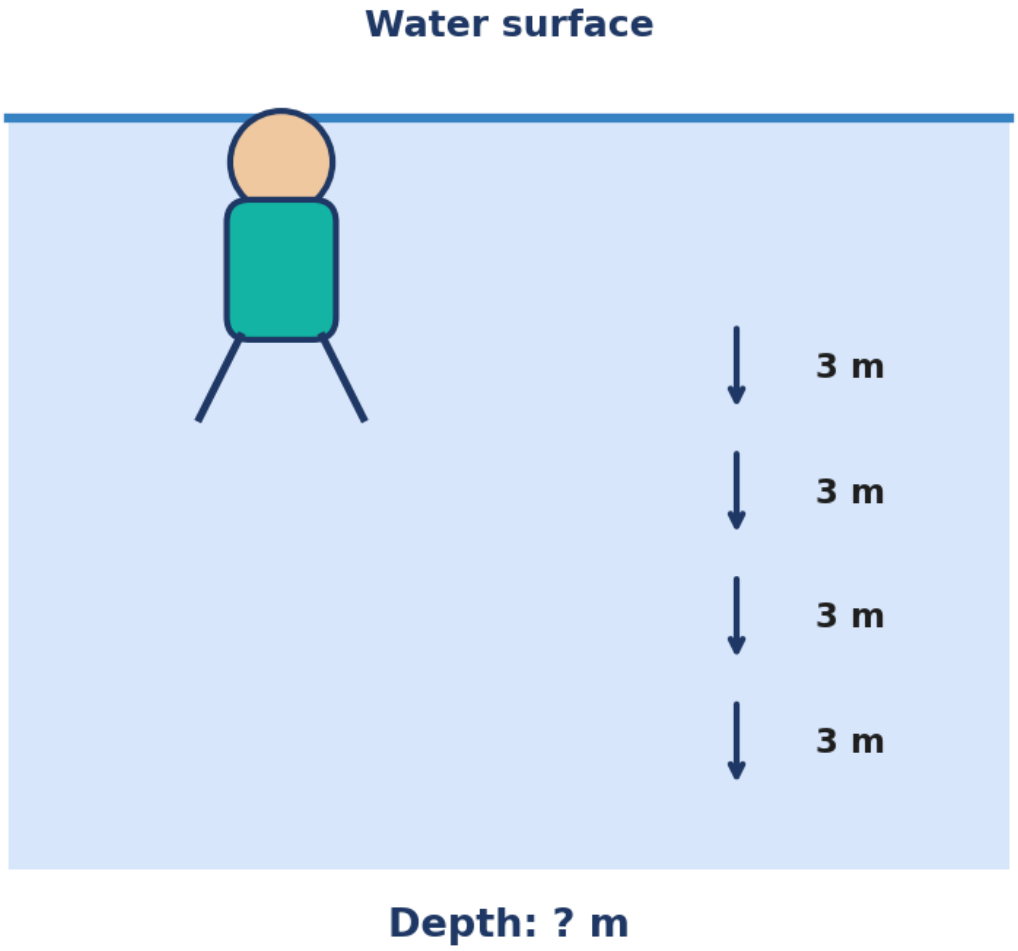
9 **A diver goes down 3 m every minute for 4 minutes. Write the total change as a signed number.**



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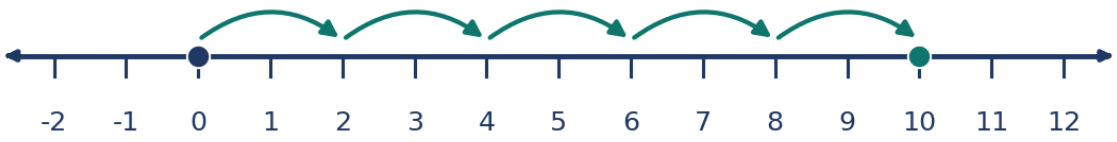
10

The number line shows that $(-2) \times (-5) = 10$. What is $(-2) \times (-5) \times (-1)$?



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ANSWER KEY

1. -12

2. -12

3. 21

4. 40

5. -9

6. 16

7. 0

8. -20

9. -12

10. -10

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