

Integers and Negative Numbers: Lesson Slides & Worksheet

Ages 12–13 · Maths

Name _____ Class _____ Date _____

A Key terms: match each term to its meaning

Write the letter of the correct meaning in the box next to each term.

- | | | |
|--------------------------------|--------------------------|---|
| 1 Integer | ☐ | A The number that adds to a given number to give zero; the ____ of -5 is 5 . |
| 2 Number line | ☐ | B $a \times (b + c) = a \times b + a \times c$ for any integers a , b and c . |
| 3 Additive inverse | ☐ | C Zero, because adding 0 to any integer leaves it unchanged. |
| 4 Absolute value | ☐ | D A line with integers marked at equal gaps; values increase from left to right. |
| 5 Closure property | ☐ | E Any of the numbers $\dots, -3, -2, -1, 0, 1, 2, 3, \dots$: whole numbers and their negatives. |
| 6 Distributive property | ☐ | F Combining two integers by an operation always gives an integer; true for $+$, $-$ and $\times$, not for $\div$. |
| 7 Additive identity | ☐ | G The size of an integer without its sign; the ____ of -8 is 8 . |

B Quick quiz

Circle the best answer, write its letter, then explain your choice in a few words.

- 1 Which of these integers is the smallest?**

- a) -2
b) 0
c) -9
d) 3

Answer: _____ Why? _____

- ## 2 What is $12 - (-8)$?

- a) 20
b) 4
c) -4
d) -20

Answer: _____ Why? _____

- ### 3 What is $(-6) \times (-7)$?

- [illegible]

Answer: _____ Why? _____

- 4** What is $(-48) \div 6$?

- a) 8 b) -8
c) -42 d) -54

Answer: _____ Why? _____

- 5** Which property does $a \times (b + c) = a \times b + a \times c$ show?

- a) Commutative property b) Associative property
c) Distributive property d) Closure property

Answer: _____ Why? _____

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Answer key for teachers · Ages 12–13 · Maths

A Key terms

1 Integer	E	Any of the numbers ..., -3, -2, -1, 0, 1, 2, 3, ...: whole numbers and their negatives.
2 Number line	D	A line with integers marked at equal gaps; values increase from left to right.
3 Additive inverse	A	The number that adds to a given number to give zero; the additive inverse of -5 is 5.
4 Absolute value	G	The size of an integer without its sign; the absolute value of -8 is 8.
5 Closure property	F	Combining two integers by an operation always gives an integer; true for +, - and $\times$, not for $\div$.
6 Distributive property	B	$a \times (b + c) = a \times b + a \times c$ for any integers a, b and c.
7 Additive identity	C	Zero, because adding 0 to any integer leaves it unchanged.

B Quick quiz

1 c) -9

On the number line, -9 lies furthest to the left, so it is the smallest. Remember that -9 is less than -2.

2 a) 20

Subtracting -8 means adding its opposite, +8. So $12 - (-8) = 12 + 8 = 20$.

3 d) 42

When two integers with the same sign are multiplied, the product is positive: $6 \times 7 = 42$, so $(-6) \times (-7) = 42$.

4 b) -8

The signs are different, so the quotient is negative. Since $6 \times 8 = 48$, $(-48) \div 6 = -8$.

5 c) Distributive property

Multiplying a sum by a number equals multiplying each part and adding. This is the distributive property of multiplication over addition.