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 × (b + c) = a × b + a × 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 ..., −3, −2, −1, 0, 1, 2, 3, ...: whole numbers and their negatives.
6	**Distributive property**	☐	**F** Combining two integers by an operation always gives an integer; true for +, − and ×, not for ÷.
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) × (−7)?

a) −42 **b)** −13
c) 13 **d)** 42

Answer: _____ Why? _____

4 What is (−48) ÷ 6?

a) 8 **b)** −8
c) −42 **d)** −54

Answer: _____ Why? _____

5 Which property does a × (b + c) = a × b + a × 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 ×, not for ÷.
6	**Distributive property**	**B**	a × (b + c) = a × b + a × 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 × 7 = 42, so (−6) × (−7) = 42.

4 b) −8

The signs are different, so the quotient is negative. Since 6 × 8 = 48, (−48) ÷ 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.