

Negative Numbers and Integer Operations

Printable student worksheet with worked examples, Practice Set 2A, Practice Set 2B, mixed practice, answers and teacher notes.

How to use this PDF

Use the first pages for teaching and guided examples. Then assign Practice Set 2A and 2B for classwork or homework. Answers are included at the end for checking and self-study.

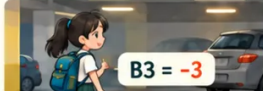


Negative Numbers with an Elevator

➤ Use floors to picture going up and down. ➤

- 1

Teri starts at the B3 carpark.



B3 = -3
- 2

Teri goes up to Thinkel tuition on Level 5.

Go up = add

$-3 + 8 = 5$
- 3

After class, Teri goes down 6 floors to get a snack at B1.

Go down = minus

$5 - 6 = -1$
- 4

Then Teri goes down 2 floors to her parents' car at B3.

Go down = minus

$-1 - 2 = -3$



Remember:

When you are below ground, going down takes you to a lower number.

Example:

Start at -7.

Go down 5 floors.

You reach -12.

So $-7 - 5 = -12$.

© Thinkel 2026

Teri's elevator story: ground floor is 0, upper floors are positive numbers, and basement floors are negative numbers.

Learning goals

By the end of this worksheet, students should be able to:

- identify positive numbers, negative numbers, zero and integers
- represent basement levels and real-life situations using negative numbers
- compare and order integers using a number line
- use the elevator model: go up = add, go down = minus
- calculate additions and minus involving negative integers
- explain why answers such as $-7 - 5 = -12$ make sense

Key idea 1

Zero is the reference point. Numbers above zero are positive. Numbers below zero are negative.

Key idea 2

On a number line, numbers to the right are greater. Numbers to the left are smaller.

Key idea 3

In the elevator model, going up means add. Going down means minus.

Key idea 4

When you start below zero and go down, you reach a lower number.

Quick recap: negative numbers

Negative numbers are numbers less than zero. They are used when a value goes below a reference point.

Temperature

-8°C means 8 degrees below 0°C .

Height

-35 m can mean 35 metres below sea level.

Money

-12 dollars can mean 12 dollars owed.

Basement floors

B1 = -1 , B2 = -2 , B3 = -3 .

A number can be written with a sign. For example, $+6$ is above zero and -6 is below zero. The number 0 is neither positive nor negative.

Integers and the number line

Integers are whole numbers, zero and negative whole numbers. Fractions and decimals are not integers.

-5	-4	-3	-2	-1	0	1	2	3	4	5
-----------	-----------	-----------	-----------	-----------	----------	----------	----------	----------	----------	----------

Comparison rule

On a number line, numbers become greater as you move to the right. Numbers become smaller as you move to the left.

Examples:

- -2 is greater than -5 because -2 is to the right of -5.
- -8 is less than -3 because -8 is to the left of -3.
- Every positive integer is greater than every negative integer.

Elevator model: go up and go down

The elevator model helps students see integer movement. In this model, ground floor is 0. Level 1 is +1, Level 2 is +2, and Level 5 is +5. Basement levels are negative: B1 is -1, B2 is -2, and B3 is -3.

Teaching rule

Go up = add

Go down = minus

Teri's story:

1. Start at B3

B3 means -3.

2. Go up to Level 5

From -3 to 5, Teri goes up 8 floors. So, $-3 + 8 = 5$.

3. Go down to B1

After class, Teri goes down 6 floors to get a snack. So, $5 - 6 = -1$.

4. Go down to B3

Then Teri goes down 2 floors to her parents' car. So, $-1 - 2 = -3$.

Why $-7 - 5 = -12$

Start at -7. Minus 5 means go down 5 floors. You do not move towards 0. You reach -12. So, $-7 - 5 = -12$.

Worked examples: add and minus integers

Use the direction first, then calculate the final position.

Example 1

Calculate $-2 + 6$.

Start at -2. Add 6 means move up or right 6 steps. You reach 4.

$$-2 + 6 = 4$$

Example 2

Calculate $3 + (-7)$.

Start at 3. Adding -7 means move down or left 7 steps. You reach -4.

$$3 + (-7) = -4$$

Example 3

Calculate $5 - 9$.

Start at 5. Minus 9 means move down or left 9 steps. You reach -4.

$$5 - 9 = -4$$

Example 4

Calculate $-4 - 6$.

Start at -4. Minus 6 means go down 6 steps. You reach -10.

$$-4 - 6 = -10$$

Practice Set 2A: negative numbers and integers

A. Write the integer for each situation.

1. A lift is at B2.
2. A temperature is 6°C below zero.
3. A diver is 15 m below sea level.
4. A lift is at Level 4.
5. A carpark level is B5.
6. A balance shows \$20 owed.
7. A hiker is 12 m above sea level.
8. The ground floor of a building.

B. Arrange each set in ascending order.

9. -3, 4, 0, -1, 2
10. -8, -2, -5, 1, 0
11. 6, -6, -1, 3, -4
12. -10, -7, -12, -1
13. 5, -2, -9, 0, 8
14. -4, -11, 2, -6, 1

C. Fill in $<$, $>$ or $=$.

15. -2 ___ -5
16. -7 ___ -1
17. 0 ___ -3
18. -9 ___ 4
19. -6 ___ -6
20. 3 ___ -8

D. Short context questions.

21. Teri is at B3. Write the integer for her floor.
22. A lift moves from Level 2 to B1. Which floor is lower?
23. Which is warmer: -2°C or -9°C ?
24. Which level is closer to the ground floor: B1 or B4?

Practice Set 2B: add and minus negative integers

A. Calculate.

1. $-3 + 5$	2. $-6 + 2$	3. $8 + (-12)$
4. $-4 + (-7)$	5. $9 - 13$	6. $-2 - 6$
7. $-10 + 4$	8. $5 + (-5)$	9. $-1 - 8$
10. $-7 - 5$	11. $12 + (-15)$	12. $-9 + 9$

B. Elevator movement questions.

13. Start at 0. Go down 4 floors. What integer do you reach?
14. Start at B2. Go up 5 floors. What integer do you reach?
15. Start at Level 3. Go down 6 floors. What integer do you reach?
16. Start at B1. Go down 3 floors. What integer do you reach?
17. Start at B5. Go up 2 floors. What integer do you reach?
18. Start at Level 4. Go down 9 floors. What integer do you reach?
19. Start at -7. Go down 5 floors. What integer do you reach?
20. Start at -8. Go up 11 floors. What integer do you reach?

C. Write a number sentence for each situation, then calculate.

21. A lift starts at B3 and goes up 6 floors.
22. A lift starts at Level 5 and goes down 8 floors.
23. A temperature is -4°C . It rises by 9°C .
24. A temperature is -2°C . It drops by 7°C .
25. A score is -6. The player loses 4 points.
26. A diver is at -12 m and rises 7 m.

Mixed practice

These questions combine ordering, number lines and integer operations.

1. Arrange in descending order: -3, 7, -9, 0, 2.
2. Which is lower: -14 or -9?
3. Calculate $-5 + 13$.
4. Calculate $-11 - 4$.
5. Calculate $6 + (-10)$.
6. A lift starts at B4 and goes up 9 floors. Write the number sentence and answer.
7. A lift starts at Level 2 and goes down 7 floors. Write the number sentence and answer.
8. Complete: -6, -4, -2, __, __, __.
9. Complete: 5, 2, -1, __, __, __.
10. Explain why -3 is greater than -8.
11. Explain why $-6 - 4 = -10$ using the elevator model.
12. A student says $-7 - 5 = -2$ because $7 - 5 = 2$. Explain the mistake.

Student reminder

For minus questions, first ask: Where do I start? Then ask: Which direction do I move? If you are going down, you reach a lower number.

Answers

Practice Set 2A

1. -2	2. -6	3. -15
4. 4	5. -5	6. -20
7. 12	8. 0	9. -3, -1, 0, 2, 4
10. -8, -5, -2, 0, 1	11. -6, -4, -1, 3, 6	12. -12, -10, -7, -1
13. -9, -2, 0, 5, 8	14. -11, -6, -4, 1, 2	15. >
16. <	17. >	18. <
19. =	20. >	21. -3
22. B1 is lower.	23. -2°C is warmer.	24. B1 is closer to the ground floor.

Practice Set 2B

1. 2	2. -4	3. -4
4. -11	5. -4	6. -8
7. -6	8. 0	9. -9
10. -12	11. -3	12. 0
13. -4	14. 3	15. -3
16. -4	17. -3	18. -5
19. -12	20. 3	21. $-3 + 6 = 3$
22. $5 - 8 = -3$	23. $-4 + 9 = 5$	24. $-2 - 7 = -9$
25. $-6 - 4 = -10$	26. $-12 + 7 = -5$	

Mixed practice answers and explanations

1. 7, 2, 0, -3, -9
2. -14 is lower.
3. 8
4. -15
5. -4
6. $-4 + 9 = 5$
7. $2 - 7 = -5$
8. 0, 2, 4
9. -4, -7, -10
10. -3 is greater than -8 because -3 is to the right of -8 on the number line.
11. Start at -6. Minus 4 means go down 4 steps. You reach -10.
12. The mistake is treating $-7 - 5$ like $7 - 5$. Start at -7 and go down 5 steps. You reach -12.

Teacher notes

Use familiar floors first

Begin with Ground Floor 0, upper levels and basement levels before moving to a number line.

Use local wording carefully

Students often say 'minus'. Use 'minus' together with direction: minus means go down or left in the model.

Avoid the word 'more' when explaining minus

For questions such as $-7 - 5$, avoid saying '5 more down'. Students may hear 'more' and think add.

Ask students to verbalise movement

Example: ' $-1 - 2$ means start at B1 and go down 2 floors to B3.'

Separate comparison from calculation

Students may compare -8 and -3 incorrectly. Return to number-line position: left is smaller, right is greater.

Build accuracy before speed

Let students draw arrows or floor movements before expecting mental calculation.

Suggested lesson flow

1. Introduce floors and basement levels. 2. Map floors to integers. 3. Practise ordering integers. 4. Use elevator movement for add/minus. 5. Assign Practice Set 2A and 2B. 6. Discuss common mistakes before mixed practice.