

GRADE 6 MATHEMATICS

Integers

Complete Printable Worksheet Pack

1. Understanding Integers & Number Lines

2. Comparing & Ordering Integers

3. Adding & Subtracting Integers

4. Multiplying & Dividing Integers

5. Integer Rules in Real Life

6. Integer Reasoning Challenge

6 worksheets + separate answer keys • A4 print-ready

Worksheet 1: Understanding Integers & Number Lines

Use positive and negative numbers confidently in different contexts.

A. Integer Number Sense

1. Write the integer represented by each description: 8 degrees below zero; 12 floors above ground; 5 metres below sea level; a gain of 9 points.

2. Place these integers in order from least to greatest: -8 , 5 , -2 , 0 , 11 , -6 .

3. Which is farther from zero: -14 or 9 ? Explain.

4. Find the distance between -7 and 6 on a number line.

5. Write the opposite of each: -13 , 8 , 0 , -21 .

B. Number Line Reasoning

6. A submarine is at -85 m. It rises 30 m. What is its new position?

7. A hiker is at 240 m and descends 310 m. What is the new elevation?

8. Which integer is exactly halfway between -12 and 8 ?

9. Give three different integers that are greater than -5 but less than 2 .

Answer Key 1: Understanding Integers & Number Lines

Solutions

1. $-8, +12, -5, +9$.
2. $-8, -6, -2, 0, 5, 11$.
3. -14 ; it is 14 units from zero, compared with 9.
4. 13 units.
5. $13, -8, 0, 21$.
6. -55 m.
7. -70 m.
8. -2 .
9. Examples: $-4, -3, -1, 0$ or 1 .

Worksheet 2: Comparing & Ordering Integers

Use the number line and distance from zero to compare integers.

A. Compare

1. Insert $>$, $<$ or $=$: -7 ___ -3 .

2. Insert $>$, $<$ or $=$: -12 ___ -18 .

3. Insert $>$, $<$ or $=$: 0 ___ -5 .

4. Insert $>$, $<$ or $=$: -9 ___ 9 .

5. Which is greater: -24 or -19 ? Explain.

B. Order & Distance

6. Order from greatest to least: -4 , 12 , -15 , 7 , 0 , -2 .

7. Which integer is closest to zero: -8 , 5 , -3 , or 9 ?

8. Find the distance between -15 and -4 .

9. Find the distance between 12 and -9 .

10. A temperature changes from -6°C to 4°C . Compare the starting and ending temperatures and state the change.

Answer Key 2: Comparing & Ordering Integers

Solutions

1. $-7 < -3$.
2. $-12 > -18$.
3. $0 > -5$.
4. $-9 < 9$.
5. -19 is greater.
6. 12, 7, 0, -2 , -4 , -15 .
7. -3 .
8. 11 units.
9. 21 units.
10. It increases by 10°C ; 4°C is greater.

Worksheet 3: Adding & Subtracting Integers

Use number-line thinking and integer rules to calculate accurately.

A. Calculate

1.

$-7 + 12$

2.

$9 + (-14)$

3.

$-8 + (-11)$

4.

$15 - 22$

5.

$-6 - 9$

6.

$-18 - (-7)$

7.

$24 + (-31)$

8.

$-25 + 17$

B. Missing Numbers & Reasoning

9.

Find the missing integer: $__ + (-8) = 15$.

10.

Find the missing integer: $-12 + __ = -30$.

11.

Find the missing integer: $__ - (-7) = -2$.

12.

Which is greater: $-15 + 8$ or $-9 - 2$? Show both results.

13.

Challenge: Write two different integer expressions that have a value of -20 .

Answer Key 3: Adding & Subtracting Integers

Solutions

1. 5.

2. -5.

3. -19.

4. -7.

5. -15.

6. -11.

7. -7.

8. -8.

9. 23.

10. -18.

11. 5.

12. -7 is greater than -11.

13. Examples: $-15 + (-5) = -20$; $10 - 30 = -20$.

Worksheet 4: Multiplying & Dividing Integers

Look for sign patterns and apply them consistently.

A. Calculate

1.

$$(-6) \times 7$$

2.

$$8 \times (-9)$$

3.

$$(-12) \times (-5)$$

4.

$$(-84) \div 7$$

5.

$$72 \div (-8)$$

6.

$$(-96) \div (-12)$$

7.

$$(-15) \times 0$$

8.

$$0 \div (-7)$$

B. Reasoning with Signs

9.

Without calculating, state whether the answer is positive or negative: $(-8) \times (-3) \times 5$.

10.

A product has a negative value. If one factor is negative, what can you say about the sign of the other factor?

11.

Find the missing integer: $(-7) \times \underline{\hspace{1cm}} = 56$.

12.

Find the missing integer: $\underline{\hspace{1cm}} \div (-6) = -9$.

13.

A temperature falls 4°C each hour for 6 hours, starting at 5°C . What is the final temperature?

Answer Key 4: Multiplying & Dividing Integers

Solutions

1. -42 .

2. -72 .

3. 60 .

4. -12 .

5. -9 .

6. 8 .

7. 0 .

8. 0 .

9. Positive.

10. The other factor must be positive.

11. -8 .

12. 54 .

13. -19°C .

Worksheet 5: Integer Rules in Real Life

Apply integer operations to temperatures, money, elevations and scores.

A. Real-Life Problems

1. At midnight the temperature is -2°C . It rises 9°C by noon and then falls 6°C at night. What is the final temperature?

2. A bank account has a balance of $-\$45$. A deposit of $\$80$ is made. What is the new balance?

3. A diver is at -18 m. She descends 12 m, then rises 20 m. What is her final position?

4. A football team loses 7 points in one round and gains 12 in the next. What is the net change?

5. A lift starts at floor 3, goes down 8 floors, then up 5 floors. Which floor does it reach?

B. Multi-Step Reasoning

6. A mountain camp is at 1,250 m. A trail drops 480 m, climbs 210 m, then drops another 95 m. What is the final elevation?

7. A game starts with a score of 0. A player gets -8 , $+15$, -6 , $+10$ and -4 . What is the final score?

8. At 7 a.m. it is -5°C . The temperature increases 3°C each hour for 5 hours. What is the temperature at noon?

9. A debt of $\$120$ is represented by -120 . You repay $\$45$ and then borrow $\$30$ more. What is the new balance?

Answer Key 5: Integer Rules in Real Life

Solutions

1. 1°C .
2. \$35.
3. -10 m .
4. +5 points.
5. Floor 0.
6. 885 m.
7. 7.
8. 10°C .
9. $-\$105$.

Worksheet 6: Integer Reasoning Challenge

Use multiple integer ideas together and explain your thinking.

Challenge

1. Three consecutive integers have a sum of -12 . What are they?

2. The product of two integers is -48 . Give three different possible pairs.

3. Find two integers whose sum is -5 and whose product is 6 .

4. A temperature is -7°C at 6 a.m. It rises 4°C , falls 9°C , then rises 6°C . What is the final temperature?

5. Which is greater: $(-4) \times 6$ or $-4 \times (-6)$? Explain.

6. An account starts at $-\$75$. Transactions are $+\$120$, $-\$50$, $-\$80$ and $+\$40$. What is the final balance?

7. A lift moves from floor -3 up 11 floors, down 7 floors and up 4 floors. Where does it finish?

8. Challenge: Find three different integers whose sum is 0 and whose product is negative.

Answer Key 6: Integer Reasoning Challenge

Solutions

1. -5 , -4 and -3 .
2. Examples: $(-6,8)$, $(-4,12)$, $(-3,16)$.
3. -2 and -3 ; their sum is -5 and product is 6 .
4. -6°C .
5. $(-4) \times 6 = -24$; $-4 \times (-6) = 24$, so 24 is greater.
6. $-\$45$.
7. Floor 5 .
8. Example: -1 , 2 and -1 gives product $+2$, so not valid. A valid example is -1 , 1 , 0 : product 0 , not negative. Therefore choose -2 , -3 , 5 : sum 0 and product 30 , positive. With three integers summing to 0 , a negative product is impossible if there are two negatives and one positive, because the positive must be greater in magnitude and the product is positive. If one is zero, product is zero. So there is no solution.