

Name _____

Date _____

1.1 Adding and subtracting integers — worksheet

Add and subtract with positive and negative integers. · 57 questions · Show your working.

Remember

- Integers are the positive and negative whole numbers together with zero: ... -3 , -2 , -1 , 0 , 1 , 2 , 3 ...
- Adding a positive number moves you **right** on the number line; subtracting a positive number moves you **left**.
- Adding a negative is the same as subtracting: $a + (-b) = a - b$.
- Subtracting a negative is the same as adding: $a - (-b) = a + b$.
- The further left a number is on the number line, the smaller it is, so $-7 < -3 < 0 < 2$.

A · Fluency — Straight calculations. Build speed and accuracy.

1 $-8 + 5 =$

2 $-3 + 9 =$

3 $6 + (-9) =$

4 $12 + (-4) =$

5 $-7 + 7 =$

6 $-15 + 6 =$

7 $4 + (-11) =$

8 $-2 + (-6) =$

9 $-7 - 4 =$

10 $3 - 8 =$

11 $-10 - 5 =$

12 $6 - 13 =$

13 $-1 - 9 =$

14 $20 - 35 =$

15 $-12 - (-5) =$

16 $4 - (-6) =$

17 $-3 - (-3) =$

18 $-8 - (-10) =$

19 $7 - (-7) =$

20 $-20 - (-25) =$

21 $-5 + 8 - 12 =$

22 $-20 - (-7) - 3 =$

23 $9 - 15 + 4 =$

24 $-6 + (-4) - (-10) =$

25 $14 - 20 - 6 =$

B · Reasoning — Missing numbers, pyramids and explanations.

26 Find the missing number: $-9 + ? = 4$

27 Find the missing number: $? - (-6) = -2$

28 Find the missing number: $6 + ? = -4$

29 Find the missing number: $? + (-7) = -15$

30 Two integers add up to -4 . One of them is 5 . What is the other?

31 Two integers add up to -4 . One of them is -11 . What is the other?

32 In this addition pyramid each brick is the sum of the two below it. Bottom row: $3, -5, 1$. What number is at the top?

- 33 Addition pyramid — bottom row 2, -4 , -6 . Find the top number.

- 34 In an addition table, the entry for row 3 and column -4 is $3 + (-4)$. What is it?

- 35 Which calculation gives the largest answer?
☐ $-3 + 8$
☐ $-3 - 8$
☐ $3 - 8$
☐ $-8 - (-3)$
- 36 Sofia says: “ $-6 - (-9)$ is negative because it starts with a negative.” Is she right?
☐ Yes
☐ No
- 37 Put these in order, smallest first, separated by commas: -3 , 2 , -7 , 0 , -1

C · Challenge — Multi-step problems that stretch you.

- 38 Two integers have a sum of -2 and a difference of 10 . What is the larger integer?

- 39 Two integers have a sum of -2 and a difference of 10 . What is the smaller integer?

- 40 Work out $(-4 + 7) - (-9 + 2)$.

- 41 Work out $-3 - (-8 + 5) - 6$.

- 42 $a + b = -5$ and $a = -12$. Work out b .

- 43 How many integers are there from -6 to 6 inclusive?

- 44 Start at -3 . Add 7 , then subtract 12 , then subtract -5 . What is the result?

- 45 What is the smallest possible value of $a - b$ if a and b are each chosen from -5 , -2 , 3 , 8 ?

D · Word problems — Integers in real contexts.

- 46 At midnight the temperature is -7°C . By noon it has risen 12°C . What is the temperature at noon, in $^{\circ}\text{C}$?

- 47 The temperature falls from 4°C to -9°C . By how many degrees did it fall?

- 48** A submarine is at -85 m. It descends a further 40 m. What is its new depth, in metres?

- 49** A diver at -18 m rises 25 m. She is now above the surface flying a drone. What is her height, in metres?

- 50** Yuri's bank balance is $-\$45$. He pays in $\$70$. What is his new balance, in dollars?

- 51** Zara's balance is $\$30$. She spends $\$52$. What is her new balance, in dollars?

- 52** A lift starts on floor -2 , goes up 7 floors, then down 3 floors. Which floor is it on?

- 53** The highest point in a country is 2 350 m above sea level and the lowest is -180 m. What is the difference in height, in metres?

- 54** In golf, a score of -4 beats a score of $+1$. A player is on -4 and then scores $+6$ on the next hole. What is her total score?

- 55** The temperature in Astana is -14 °C and in Cairo it is 21 °C. How many degrees warmer is Cairo?

- 56** A company made a profit of $\$120\,000$ in year 1, a loss of $\$185\,000$ in year 2 and a profit of $\$90\,000$ in year 3. What is the overall result, in dollars? (Use a negative number for a loss.)

- 57** At 6 a.m. the temperature is -11 °C. It rises 3 °C every hour. At what time does it first reach 1 °C? Give the hour as a 24-hour number, e.g. 10 for 10 a.m.
