

2.5 Mixed calculations with integers

1 Complete these additions. You can use a number line to help.

• To add a positive number, move to the right.

• To add a negative number, move to the left.

a $-3 + 4 =$ _____ **b** $-1 + (-5) =$ _____ **c** $4 + (-2) =$ _____

d $5 + (-3) =$ _____ **e** $-2 + 6 =$ _____ **f** $-3 + (-4) =$ _____

g $7 + (-7) =$ _____ **h** $-6 + 8 =$ _____ **i** $-8 + 6 =$ _____

2 Complete these subtractions.

Remember, to subtract a negative number, replace $- (-)$ with $+$.

a $3 - 5 =$ _____ **b** $-3 - 5 =$ _____ **c** $8 - 4 =$ _____

d $4 - (-2) =$ _____ **e** $-6 - (-3) =$ _____ **f** $5 - (-3) =$ _____

g $-7 - 3 =$ _____ **h** $-8 - 9 =$ _____ **i** $-6 - 6 =$ _____

3 Complete these multiplications. When you multiply two integers:

• two like signs give a positive answer

• two unlike (different) signs give a negative answer.

a $3 \times (-2) =$ _____ **b** $4 \times (-3) =$ _____ **c** $-3 \times 5 =$ _____

d $-5 \times 7 =$ _____ **e** $-4 \times (-5) =$ _____ **f** $-7 \times -4 =$ _____

g $-9 \times 5 =$ _____ **h** $-8 \times (-4) =$ _____ **i** $-5 \times 0 =$ _____

4 Complete these divisions. When you divide with integers:

• two like signs give a positive answer

• two unlike (different) signs give a negative answer.

a $-10 \div 2 =$ _____ **b** $-15 \div 3 =$ _____ **c** $12 \div (-3) =$ _____

d $6 \div (-6) =$ _____ **e** $-20 \div (-4) =$ _____ **f** $-24 \div (-6) =$ _____

g $-32 \div 4 =$ _____ **h** $48 \div (-8) =$ _____ **i** $-27 \div (-9) =$ _____

5 Complete these calculations.

a $5 - 9 =$ _____ **b** $-6 + 7 =$ _____ **c** $6 \times 4 =$ _____

d $-5 \times (-3) =$ _____ **e** $8 + (-3) =$ _____ **f** $-7 - (-5) =$ _____

g $-4 + (-7) =$ _____ **h** $-12 \div 2 =$ _____ **i** $-6 - 8 =$ _____

j $5 \times (-6) =$ _____ **k** $36 \div (-4) =$ _____ **l** $-8 + 3 =$ _____

m $-56 \div (-8) =$ _____ **n** $3 - (-3) =$ _____ **o** $-8 \times (-4) =$ _____

p $-7 \times 11 =$ _____ **q** $-8 - 4 =$ _____ **r** $-81 \div (-9) =$ _____

2.5 Mixed calculations with integers

CONTINUED

When a calculation involves **more than one operation**:

- **Step 1:** Simplify inside any grouping symbols (brackets).
- **Step 2:** Work any \times or \div from left to right.
- **Step 3:** Work any $+$ or $-$ from left to right.

EXAMPLES

The first step is shown in **bold**.

$$3 - 8 + 2$$

$$= -5 + 2$$

$$= -3$$

$$-7 + 3 \times 4$$

$$= -7 + 12$$

$$= 5$$

$$(6 - 9) \div 3$$

$$= -3 \div 3$$

$$= -1$$



6 Complete these calculations.

a $7 - 3 + 2$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

b $6 - (-3) - 7$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

c $-4 + 7 - 9$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

d $-9 - (-6) + 3$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

e $7 - 5 \times 3$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

f $6 + 3 \times (-2)$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

g $-8 + 5 \times 2$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

h $9 - (4 + 7)$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

i $(5 - 8) \times 2$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

j $(-4 - 2) \times 3$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

k $-4 \times (3 - 6)$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

l $(4 - 12) \div 4$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

m $(-9 - 7) \div (-4)$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

n $-8 \times 2 \times (-1)$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

o $6 \times (-5) \div 3$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

p $6 \times (-4) \div (-8)$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

q $-27 \div (-3) \times 2$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

r $-4 \times (-3) - 6 \times 2$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

2.6 Further problems involving integers

- 1 At midday the temperature at Perisher Valley was 5°C .
The temperature dropped 2°C every hour.
What was the temperature at 6 pm? _____
- 2 In a game of indoor cricket, a team loses 5 runs off their score each time they lose a wicket. Sean's team scored 123 runs, but lost 7 wickets.
What is their final score? _____
3. The temperature was -2°C at 6 am yesterday morning.
It rose by 7°C during the morning, and dropped 10°C during the afternoon.
What was the temperature at 6 pm? _____

- 4 The average temperature in January at Alice Springs was 29°C .
At Beijing (China), the average temperature during January was -5°C .

What is the difference between these temperatures?



- 5 Brendan had a debit balance of \$463 in his credit card account at the beginning of the month. He owed \$463. He made a payment of \$260. Brendan then made purchases costing \$47, \$163, \$85 and \$124.
What is the new balance on his account? _____

- 6 Anita is scuba diving 70 metres below sea level.
The water is 165 metres deep.
A helicopter flying directly above Anita reports it is 150 metres above sea level.

a How far is Anita above the ocean floor?

b How far is the helicopter above the ocean floor?

c What is the vertical distance between Anita and the helicopter? _____

