2.6 Adding and subtracting negative integers
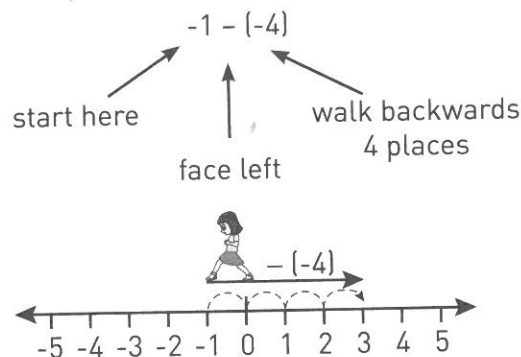
Adding negative integers

$$-4 + (-6)$$

start here   face right   walk backwards 6 places

+ (-6)

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5
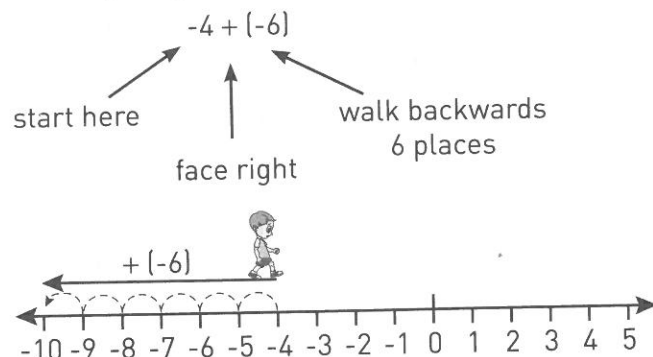
Adding a negative integer is the same as subtracting.

-4 + -6 is the same as -4 – 6.

Subtracting negative integers

$$-1 - (-4)$$

start here   face left   walk backwards 4 places

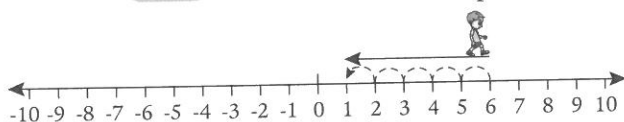– (-4)

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

Subtracting a negative integer is the same as adding.
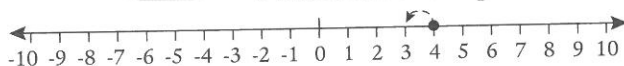
-1 – -4 is the same as -1 + 4.

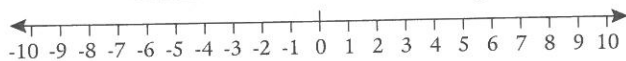**1** For each addition below, follow the instructions to determine the answer.

a 6 + -5
- Start at 6.
- Face right (towards the positive end of the number line)
- Walk backwards 5 places.

= ⬚

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

b 4 + -9
- Start at 4.
- Face right (towards the positive end of the number line).
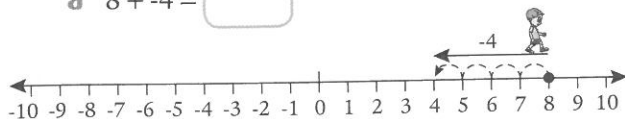- Walk backwards 9 places.

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-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

c -2 + -7
- Start at -2.
- Face right (towards the positive end of the number line).
- Walk backwards 7 places.

= ⬚

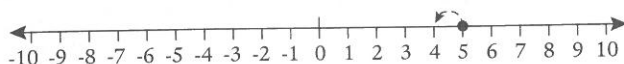-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

2 Calculate by facing right and then walking backwards.

a 8 + -4 = ⬚

-4

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

b 5 + -7 = ⬚

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

c -6 + -2 = ⬚

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

d -3 + -5 = ⬚

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
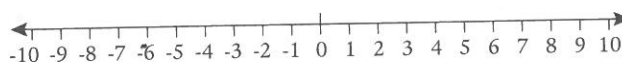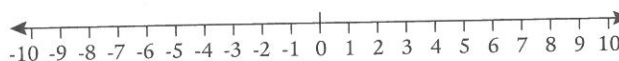
3 Calculate:

> **Tip** Adding a negative integer is the same as subtracting a positive integer (e.g. 5 + -1 is the same as 5 – 1).

a 7 + -4

= 7 – 4

= ⬚

b 3 + -5

= ___ – ___

= ⬚

c -1 + -9

= ___ – ___

= ⬚

d -8 + -7

= ___ – ___

= ⬚

4 Calculate:

a 9 + -15

= _9_ – _15_

= ⬚

b -16 + -4

= ___ – ___

= ⬚

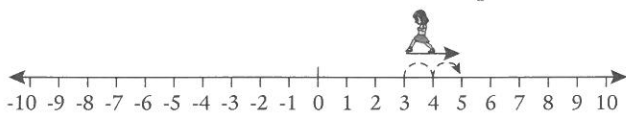**c** -15 + -21

= ___ – ___

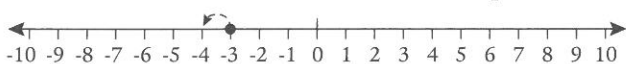= ⬚

d 7 + -20

= ___ – ___

= ⬚

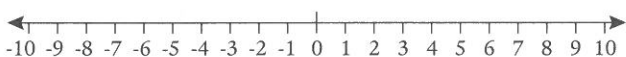**5** For each subtraction below, follow the instructions to determine the answer.

a 3 – -2

= ☐

- Start at 3.
- Face left (towards the negative end of the number line).
- Walk backwards 2 places.

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

b -4 – -11

= ☐

- Start at -4.
- Face left (towards the negative end of the number line).
- Walk backwards 11 places.

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

c -2 – -5

= ☐

- Start at -2.
- Face left (towards the negative end of the number line).
- Walk backwards 5 places.

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

6 Use the number lines to calculate the answer.

a 7 – -3 = ☐

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

b 1 – -8 = ☐

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

c -3 – -6 = ☐

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

d -5 – -5 = ☐
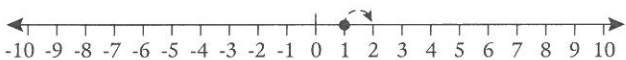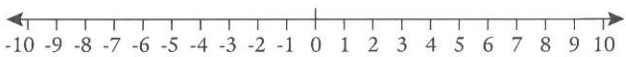
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
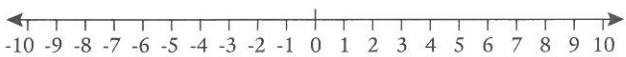
7 Answer the following.

a 10 – -6

= 10 + 6

= ☐

b -2 – -15

= ___ + ___

= ☐

c -8 – -13

= ___ + ___

= ☐

d -25 – -10

= ___ + ___

= ☐

8 Use the number line to evaluate the following.

a 6 + -15 – -3

= _____

= ☐

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

b -5 – -6 + -2

= _____

= ☐

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

c -1 + -9 – -16

= _____

= ☐
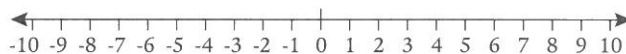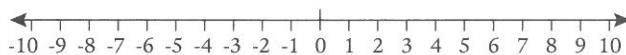
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
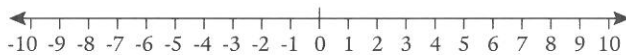
NAPLAN-ready

Shade the box beneath the correct answer.

Jin is standing on a number line at -5, facing right. She walks forwards to +2, then turns and walks to -3. Which number sentence describes her movements?

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

-5 + 2 – 3
☐

-5 + 7 – 10
☐

-5 + 7 – 5
☐

-5 – 7 + 9
☐

Tip Count the jumps needed to arrive at the stated numbers. Note the direction in which Jin moves each time.