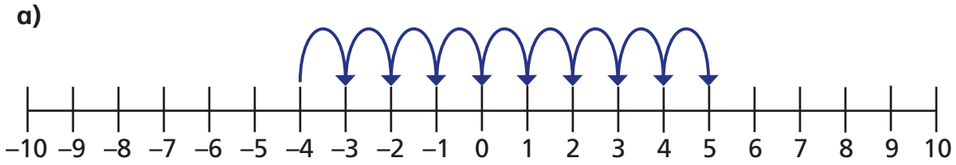
Perform calculations that cross zero

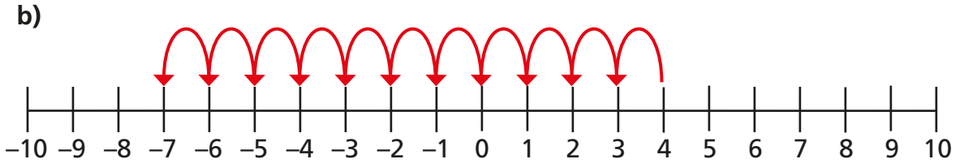
1 Complete the calculations represented on the number lines.

a)



–4 + 9 = 5

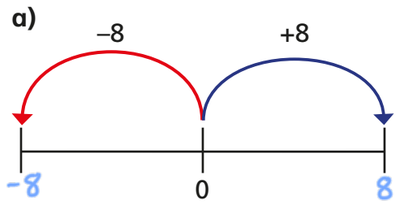
b)



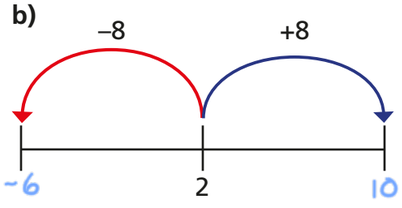
4 – 11 = –7

2 Fill in the missing numbers on the number lines.

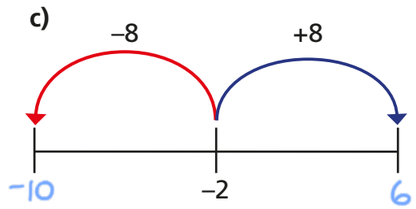
a)



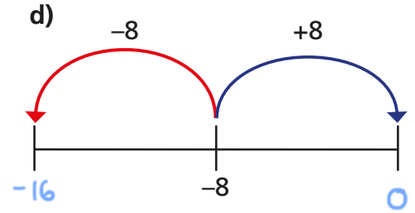
b)



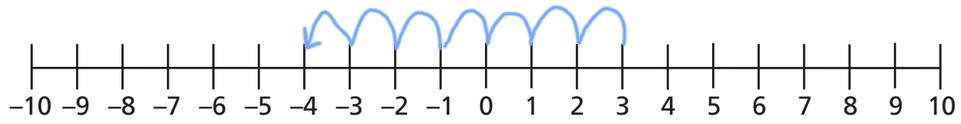
c)



d)



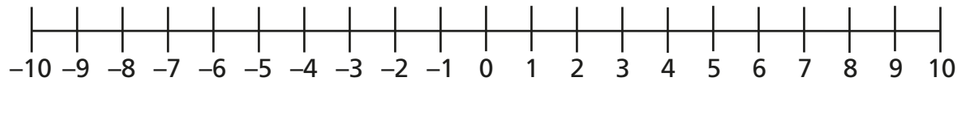
3 Tommy is finding 7 less than 3



Show how you can use the number line to get the answer.

Discuss your method with a partner.

4 Complete the calculations.



a) 7 – 5 = 2

b) 5 – 7 = –2

c) –5 + 7 = 2

d) –7 + 5 = –2

e) –3 – 5 = –8

f) –8 + 2 = –6

g) –2 + 10 = 8

h) 9 = –3 + 12

5 Complete the number sentences.

a) 5 – 9 = –4 –5 – 9 = –14 –5 + 9 = 4

b) 1 – 8 = –7 –1 – 6 = –7 –1 + 8 = 7

c) –28 = –12 –16 –28 = –44 + 16 28 = 44 – 16

d) –4 + 34 – 43 = –13 102 = –9 + 111

–20 = – 59 – 7 + 46

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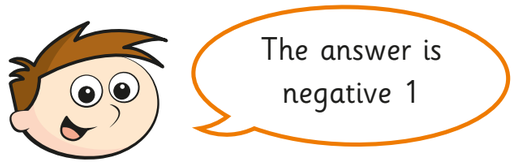
6 Teddy is working out the answer to 2 less than negative 3



What mistake has Teddy made?

What is the correct answer? [-5]

7 The table shows the temperature in five cities at 12 midnight.

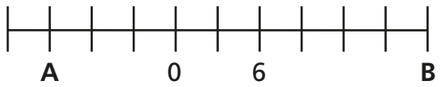
City	Temperature
Moscow	–15 °C
New York	–6 °C
London	3 °C
Paris	8 °C
Dubai	22 °C

a) The temperature in Moscow rises by 8 °C by 12 noon.
What is the temperature at 12 noon? [-7] °C

b) The temperature in London drops by 7 °C.
What is the new temperature? [-4] °C

c) The temperature in New York at 12 noon is 6 °C.
By how many °C has the temperature risen? [12] °C

8 Find the difference between A and B.



[27]

9 Find the missing terms in the linear sequences.

a) –10, –7, –4, [-1], [2], [5]

b) 9, 2, [-5], [-12], [-19]

c) –19, –24, [-29], [-34], [-39], –44

d) –2, [-1·5], [-1], –0.5, [0], [0·5], [1]

10 Simplify the expressions by collecting like terms.

a) $3a - 7a \equiv$ [-4a]

b) $4b - 5b - 5b \equiv$ [-6b]

c) $0.5d - d \equiv$ [-0·5d]

d) $-7e - 13e - 2e \equiv$ [-22e]

e) $8g - g + 9h - 8g - 9h \equiv$ [-g]

f) $-2.3k + 3k \equiv$ [0·7k]

11 Four numbers are put in ascending order.

[ ] [ ] [ ] [8]

- The difference between the largest and smallest number is 11
- The total of the 4 cards is 10

a) Find the three missing numbers. [-3], [1], [4]

b) How many different solutions can you find?

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