Exercise 1.1

1 Do these additions.

    a $-3+4$ **b** $3+-7$ **c** $-4+-4$ **d** $9+-5$

2 Do these subtractions.

    a $-1-5$ **b** $3--5$ **c** $-3-7$ **d** $-4--6$

3 Work out:

    a $4+-6$ **b** $4--6$ **c** $-4+6$ **d** $-4-6$

4 Work out the missing integers.

    a $6+\boxed{}=10$ **b** $6+\boxed{}=4$ **c** $6+\boxed{}=-4$ **d** $6+\boxed{}=0$

5 Two integers add up to -4. One of the integers is 5. Work out the other integer.

> **Tip**
>
> A 'pair of integers' means 'two integers'.

6 -1 and 7 is a pair of integers that add up to 6.

    a   Find four pairs of integers that add up to 1.

    b   How can you see immediately that two integers add up to 1?
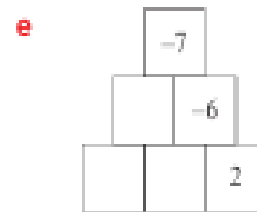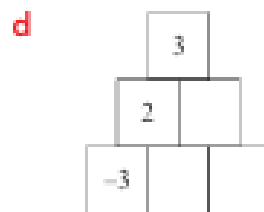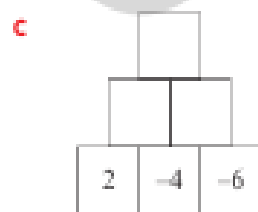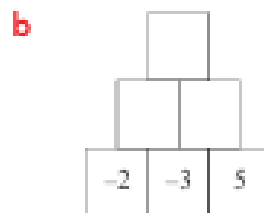
7 ● and ▲ are two integers.

    a   Show that ● + ▲ and ▲ + ● have the same value.

    b   Do ● − ▲ and ▲ − ● have the same value? Give evidence to **justify** your answer.

8 Copy and complete this addition table.

+	−4	6	−2
3		9	
−5			

9 Copy and complete these addition pyramids. The first one has been started for you.

> **Tip**
>
> In part **a**, $3+-5=-2$.

10 Estimate the answers to these questions. Round the numbers to the nearest whole number.

   a $-3.14+8.26$ **b** $-5.93-6.37$

   c $3.2--6.73$ **d** $-13.29+-5.6$

11 Estimate the answers to these questions.

   a $-67+29$ **b** $-82-47$

   c $688--512$ **d** $-243+-514$

12 a Work out:

      i $-3+4+-5$ **ii** $-5+4+-3$

      iii $-3+-5+4$ **iv** $-3+4+-5$

   b What do the answers to part **a** show? Is this true for any three integers?

Think like a mathematician

13 a Copy and complete this addition table.

   b Add the four answers inside the addition table.

   c Add the four integers on the side and the top of the addition table.

   d What do you notice about the answers to parts **b** and **c**? Is this true for any addition table? Give evidence to justify your answer.

+	-5	7
4		
-3		

How did you do the investigation in part **d**? Could you improve your method?

14 Three integers are equally spaced on a number line. Two of the integers are -3 and 7.

   a What is the other integer? Is there more than one possible answer?

   b Compare your answer with a partner's. Critique each other's method.