Here is a simple rule, which also works for division.

When you multiply two integers:
if they have same signs → positive answer
if they have different signs → negative answer

Worked example 1.1b

Work these out. **a** 12×-3 **b** -8×-5 **c** $-20 \div 4$ **d** $-24 \div -6$

a $12 \times -3 = -36$ — $12 \times 3 = 36$ — The signs are different so the answer is negative.
b $-8 \times -5 = 40$ — $8 \times 5 = 40$ — The signs are the same so the answer is positive.
c $-20 \div 4 = -5$ — $20 \div 4 = 5$ — The signs are different so the answer is negative.
d $-24 \div -6 = 4$ — $24 \div 6 = 4$ — The signs are the same so the answer is positive.

Warning: This rule works for multiplication and division. It does not work for addition or subtraction.

Exercise 1.1

1 Work out these additions.
a $3 + -6$ **b** $-3 + -8$ **c** $-10 + 4$ **d** $-10 + -7$ **e** $12 + -4$

2 Work out these additions.
a $30 + -20$ **b** $-100 + -80$ **c** $-20 + 5$ **d** $-30 + -70$ **e** $45 + -40$

3 Work out these subtractions.
a $4 - 6$ **b** $-4 - 6$ **c** $6 - 4$ **d** $-6 - 6$ **e** $-2 - 10$

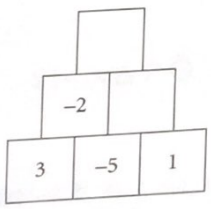
4 Write down additions that have the same answers as these subtractions. Then work out the answer to each one.
a $4 - -6$ **b** $-4 - -6$ **c** $8 - -2$ **d** $-4 - -6$ **e** $12 - -10$

5 Work out these subtractions.
a $7 - -2$ **b** $-5 - -3$ **c** $12 - -4$ **d** $-6 - -6$ **e** $-2 - -10$

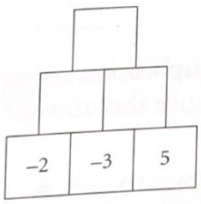
6 Here are some addition pyramids. Each number is the sum of the two in the row below it.
Copy the pyramids. Fill in the missing numbers.

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

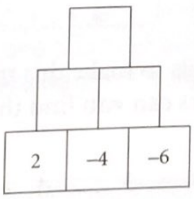
a



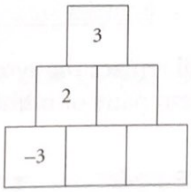
b



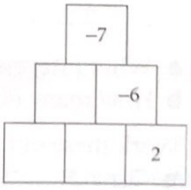
c



d



e



7 Here is a subtraction table. Two answers have already been filled in: $4 - -4 = 8$ and $-4 - 2 = -6$.
Copy the table and complete it.

		second number				
	−	−4	−2	0	2	4
first number	4	8				
	2					
	0					
	−2				−6	
	−4					