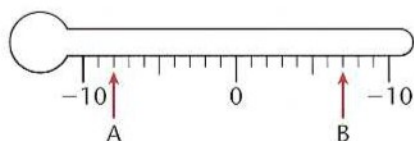


TARGET To use negative numbers in the context of temperature and calculate across zero.

Example

Find the difference in temperature between A and B.



$$A = -8^{\circ}\text{C} \quad -8^{\circ}\text{C} \rightarrow 0^{\circ}\text{C} = 8^{\circ}\text{C}$$

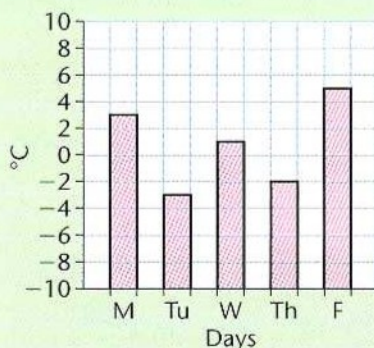
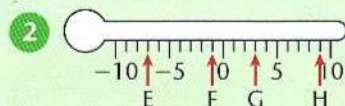
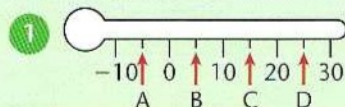
$$B = 7^{\circ}\text{C} \quad 0^{\circ}\text{C} \rightarrow 7^{\circ}\text{C} = 7^{\circ}\text{C}$$

$$-8^{\circ}\text{C} \rightarrow 7^{\circ}\text{C} = (8 + 7)^{\circ}\text{C} = 15^{\circ}\text{C}$$

Answer 15°C

A

Write the temperature shown by each letter.



3 What was the coldest temperature recorded?

4 On which days was the temperature below 0°C ?

5 What was the fall in temperature from:
a) Monday to Tuesday
b) Wednesday to Thursday?

6 What was the rise in temperature from:
a) Tuesday to Wednesday
b) Thursday to Friday?

B

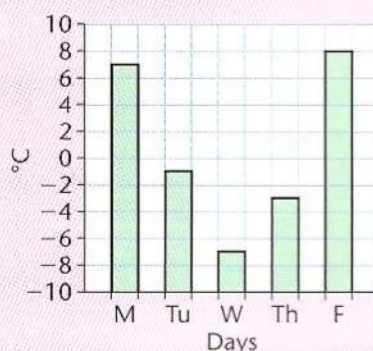
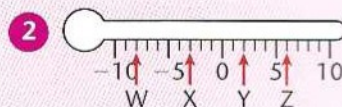
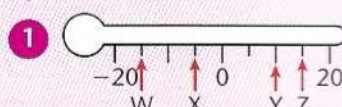
For each thermometer, find the difference between:

a) X and Z

b) W and Y

c) X and Y

d) W and Z.



3 What was the fall in temperature from:
a) Monday to Tuesday
b) Tuesday to Wednesday?

4 What was the rise in temperature from:
a) Wednesday to Thursday
b) Thursday to Friday?

C

1 Copy and complete this table showing the maximum and minimum temperatures for different places.

Max.	Range	Min.
17°C	22°C	-5°C
28°C	46°C	
11°C	54°C	
-4°C	23°C	
46°C	52°C	
2°C		-37°C
35°C		-16°C
53°C		-7°C
-9°C		-23°C
	66°C	-35°C
	47°C	-54°C
	53°C	-28°C
	28°C	-41°C

2 Find the range between the highest and lowest temperature ever recorded in each UK country.

Country	High	Low
England	38.5°C	-26.1°C
Scotland	32.9°C	-27.2°C
Wales	35.2°C	-23.3°C
N.I.	30.8°C	-18.7°C

TARGET To solve number puzzles involving the addition and subtraction of positive and negative numbers.

In a magic square the sum of each row, column and diagonal is the same.

-7	2	-1
4	-2	-8
-3	-6	3

Example

Row $4 + -2 + -8 = -6$

Column $2 + -2 + -6 = -6$

Diagonal $3 + -2 + -7 = -6$

Copy and complete the following magic squares.

A

1

		11
	14	
17	6	

2

26		
32	17	20

3

25		
	18	
17		11

4

	29	
	25	
	21	34

5

12		
57		
18		46

B

1

1		
-4	3	-2

2

		-5
		4
5		1

3

-1		
	-2	
-5		-3

4

	-7	8
	1	
-6		

5

-2		
5		
6		8

C

1

1			2
-6	7	4	-7
	-5		
		3	-2

2

	3		8
9		2	
	1	5	
-5		0	7

3

4			3
-5	-2	1	-4
	-6		
		2	-9

4

5			4
	3	6	
		-4	1
-5	2		-2

TARGET To practise addition and subtraction for larger numbers.

Examples

$$\begin{array}{r} 345685 \\ + 269217 \\ \hline 614902 \\ \hline 11 \quad 11 \end{array}$$

$$\begin{array}{r} 41012131 \\ 5\cancel{1}\cancel{3}\cancel{4}\cancel{0} \\ - 28547 \\ \hline 22793 \end{array}$$

$$\begin{array}{r} 6111591 \\ 726035 \\ - 149571 \\ \hline 576464 \end{array}$$

A

Copy and complete.

$$\begin{array}{r} 1 \quad 2747 \\ + 579 \end{array} \quad \begin{array}{r} 7 \quad 1284 \\ - 907 \end{array}$$

$$\begin{array}{r} 2 \quad 4885 \\ + 2626 \end{array} \quad \begin{array}{r} 8 \quad 5431 \\ - 3685 \end{array}$$

$$\begin{array}{r} 3 \quad 3539 \\ + 2872 \end{array} \quad \begin{array}{r} 9 \quad 3125 \\ - 1650 \end{array}$$

$$\begin{array}{r} 4 \quad 2673 \\ + 1749 \end{array} \quad \begin{array}{r} 10 \quad 6372 \\ - 5713 \end{array}$$

$$\begin{array}{r} 5 \quad 6396 \\ + 1605 \end{array} \quad \begin{array}{r} 11 \quad 9540 \\ - 4892 \end{array}$$

$$\begin{array}{r} 6 \quad 4968 \\ + 4895 \end{array} \quad \begin{array}{r} 12 \quad 7213 \\ - 3724 \end{array}$$

- 13 There are 3594 passengers on board a cruise ship. 1768 more passengers come on board. How many passengers are there now on the ship?

- 14 Between 10 am and 11 am, 8130 people enter a shopping mall and 6143 people leave. How many more people are in the mall at 11 am than at 10 am?

B

Copy and complete.

$$\begin{array}{r} 1 \quad 16794 \\ + 14618 \end{array} \quad \begin{array}{r} 7 \quad 44256 \\ - 35873 \end{array}$$

$$\begin{array}{r} 2 \quad 53479 \\ + 35635 \end{array} \quad \begin{array}{r} 8 \quad 82512 \\ - 40574 \end{array}$$

$$\begin{array}{r} 3 \quad 27856 \\ + 27348 \end{array} \quad \begin{array}{r} 9 \quad 56434 \\ - 27693 \end{array}$$

$$\begin{array}{r} 4 \quad 45645 \\ + 19657 \end{array} \quad \begin{array}{r} 10 \quad 93185 \\ - 13986 \end{array}$$

$$\begin{array}{r} 5 \quad 38928 \\ + 33457 \end{array} \quad \begin{array}{r} 11 \quad 65341 \\ - 29588 \end{array}$$

$$\begin{array}{r} 6 \quad 54563 \\ + 19638 \end{array} \quad \begin{array}{r} 12 \quad 31620 \\ - 24926 \end{array}$$

- 13 Rangers play Rovers both at home and away. The matches are watched by crowds of 49 384 and 37 957. What is the total attendance for the two matches?

- 14 In one year a delivery van is driven 61 380 miles. This is 16 487 miles further than during the previous year. What was the van's mileage in the first year?

C

Set out as in the example.

$$1 \quad 374948 + 126954$$

$$2 \quad 293895 + 206835$$

$$3 \quad 535767 + 293872$$

$$4 \quad 966574 + 359869$$

$$5 \quad 759486 + 472594$$

$$6 \quad 688659 + 217696$$

$$7 \quad 715423 - 597464$$

$$8 \quad 604635 - 326690$$

$$9 \quad 453242 - 196597$$

$$10 \quad 860317 - 283718$$

$$11 \quad 542160 - 479577$$

$$12 \quad 937054 - 739486$$

- 13 A manufacturing company has annual sales of £851 602 and expenses of £164 918. How much profit is made?

- 14 In ten years the population of a city increases from 457 485 to 537 240. By how much has the population increased?

TARGET To practise short multiplication of whole numbers and decimals.

Examples

Work from the right and carry.

$$\begin{array}{r} 3975 \\ \times 7 \\ \hline 27825 \\ 653 \end{array}$$

$$\begin{array}{r} 40.28 \\ \times 6 \\ \hline 241.68 \\ 14 \end{array}$$

Align decimal points.

A

Copy and complete.

1 138×3

7 90.5×4

2 746×2

8 87.2×8

3 295×6

9 94.2×3

4 327×9

10 73.5×5

5 680×5

11 51.9×9

6 194×7

12 17.4×6

Work out

13 827×4 21 31.9×2

14 263×7 22 46.3×4

15 508×2 23 65.2×9

16 436×8 24 20.8×7

17 657×3 25 38.4×5

18 386×6 26 9.5×8

19 840×9 27 5.39×3

20 924×5 28 72.6×6

B

Copy and complete.

1 2067×5

7 84.35×3

2 1859×4

8 376.2×9

3 4283×8

9 253.8×7

4 6174×7

10 39.26×4

5 7398×11

11 94.07×12

6 5916×6

12 617.5×8

Work out

13 2348×6 21 46.52×11

14 7290×3 22 704.8×6

15 3582×5 23 65.37×4

16 1594×9 24 91.24×5

17 7408×4 25 428.6×7

18 6815×12 26 37.05×12

19 2936×8 27 285.7×9

20 5049×7 28 50.79×8

C

Work out

1 13269×6

2 54706×3

3 29548×12

4 161437×5

5 47095×8

6 135176×7

7 269840×9

8 183501×11

9 392.19×4

10 73.867×2

11 9267.4×11

12 24.908×7

13 613.57×9

14 52.836×8

15 36.179×12

16 274.85×6

17 A delivery firm buys seven new vans, each costing £16 549. What is the total cost of the vans?

18 One box of tiles weighs 23.875 kg. What is the total weight of six boxes?

TARGET To practise short multiplication of whole numbers and decimals.

Examples

Work from the right and carry.

$$\begin{array}{r} 5704 \\ \times 8 \\ \hline 45632 \\ 5 \quad 3 \end{array}$$

$$\begin{array}{r} 62.58 \\ \times 9 \\ \hline 563.22 \\ 257 \end{array}$$

Align decimal points.

A

Copy and complete.

$$\begin{array}{l} \textcircled{1} \quad 364 \\ \times 2 \end{array}$$

$$\begin{array}{l} \textcircled{5} \quad 9.7 \\ \times 4 \end{array}$$

$$\begin{array}{l} \textcircled{2} \quad 173 \\ \times 8 \end{array}$$

$$\begin{array}{l} \textcircled{6} \quad 5.8 \\ \times 6 \end{array}$$

$$\begin{array}{l} \textcircled{3} \quad 429 \\ \times 5 \end{array}$$

$$\begin{array}{l} \textcircled{7} \quad 6.4 \\ \times 3 \end{array}$$

$$\begin{array}{l} \textcircled{4} \quad 246 \\ \times 7 \end{array}$$

$$\begin{array}{l} \textcircled{8} \quad 2.6 \\ \times 9 \end{array}$$

Work out

$$\textcircled{9} \quad 587 \times 2 \quad \textcircled{13} \quad 9.7 \times 3$$

$$\textcircled{10} \quad 175 \times 9 \quad \textcircled{14} \quad 7.4 \times 6$$

$$\textcircled{11} \quad 346 \times 5 \quad \textcircled{15} \quad 3.8 \times 4$$

$$\textcircled{12} \quad 285 \times 8 \quad \textcircled{16} \quad 5.9 \times 7$$

$\textcircled{17}$ One biscuit weighs 8.2 g. What do seven biscuits weigh?

$\textcircled{18}$ On one day 258 people visit a stately home. The entrance fee is £9. How much is taken in entrance fees?

B

Copy and complete.

$$\begin{array}{l} \textcircled{1} \quad 1564 \\ \times 5 \end{array}$$

$$\begin{array}{l} \textcircled{5} \quad 195.3 \\ \times 12 \end{array}$$

$$\begin{array}{l} \textcircled{2} \quad 3916 \\ \times 11 \end{array}$$

$$\begin{array}{l} \textcircled{6} \quad 24.65 \\ \times 6 \end{array}$$

$$\begin{array}{l} \textcircled{3} \quad 4638 \\ \times 8 \end{array}$$

$$\begin{array}{l} \textcircled{7} \quad 63.28 \\ \times 4 \end{array}$$

$$\begin{array}{l} \textcircled{4} \quad 3739 \\ \times 9 \end{array}$$

$$\begin{array}{l} \textcircled{8} \quad 230.7 \\ \times 7 \end{array}$$

Work out

$$\textcircled{9} \quad 4795 \times 3 \quad \textcircled{13} \quad 40.26 \times 7$$

$$\textcircled{10} \quad 1824 \times 9 \quad \textcircled{14} \quad 209.1 \times 8$$

$$\textcircled{11} \quad 5237 \times 11 \quad \textcircled{15} \quad 78.39 \times 6$$

$$\textcircled{12} \quad 8578 \times 4 \quad \textcircled{16} \quad 64.07 \times 12$$

$\textcircled{17}$ One side of a square picture frame is 37.25 cm. What is its perimeter?

$\textcircled{18}$ Stacey earns £2947 each month. How much does she earn in six months?

C

Work out

$$\textcircled{1} \quad 61527 \times 6$$

$$\textcircled{2} \quad 14936 \times 7$$

$$\textcircled{3} \quad 159318 \times 3$$

$$\textcircled{4} \quad 237284 \times 11$$

$$\textcircled{5} \quad 25179 \times 9$$

$$\textcircled{6} \quad 490567 \times 2$$

$$\textcircled{7} \quad 143658 \times 8$$

$$\textcircled{8} \quad 26745 \times 12$$

$$\textcircled{9} \quad 82.092 \times 4$$

$$\textcircled{10} \quad 582.74 \times 7$$

$$\textcircled{11} \quad 30.498 \times 6$$

$$\textcircled{12} \quad 195.63 \times 11$$

$$\textcircled{13} \quad 63.084 \times 9$$

$$\textcircled{14} \quad 197.356 \times 5$$

$$\textcircled{15} \quad 71.902 \times 8$$

$$\textcircled{16} \quad 84.039 \times 12$$

$\textcircled{17}$ There are eight stock cubes in each box. How many cubes are there in 176 245 boxes?

$\textcircled{18}$ Basil earns £2719.50 per month. How much does he earn in 12 months?