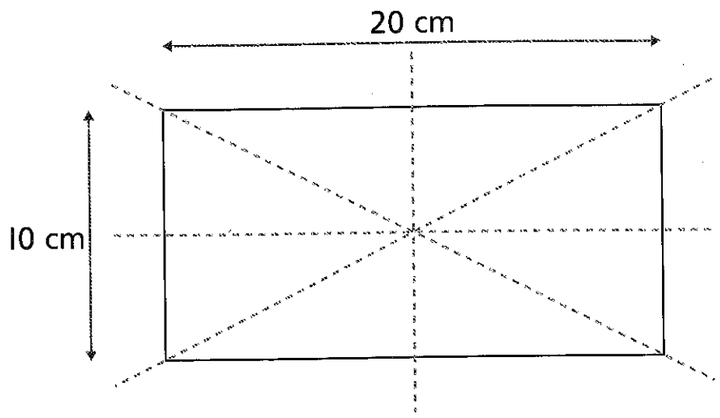
Power puzzle

Cut a rectangle into 8 triangles like this.



How many different polygons can you make? Try using:

4 triangles 5 triangles 6 triangles 7 triangles 8 triangles

Now sort your shapes depending on features such as symmetry, or the number of obtuse angles.

Textbook 6C p60

Problem solving – place value

1 The table shows children's scores for a computer game.

Max	57,483
Emma	56,832
Jamilla	57,843
Richard	56,809

Add names to make each statement correct.

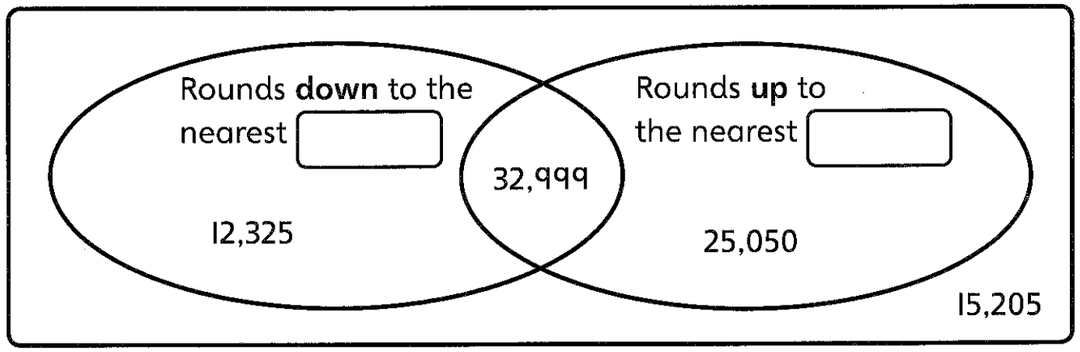
a) Max's score < _____

b) _____ < Emma's score

c) _____ < _____ < _____ < _____

2 Four numbers have been placed in the sorting circles.

Complete the label for each group.



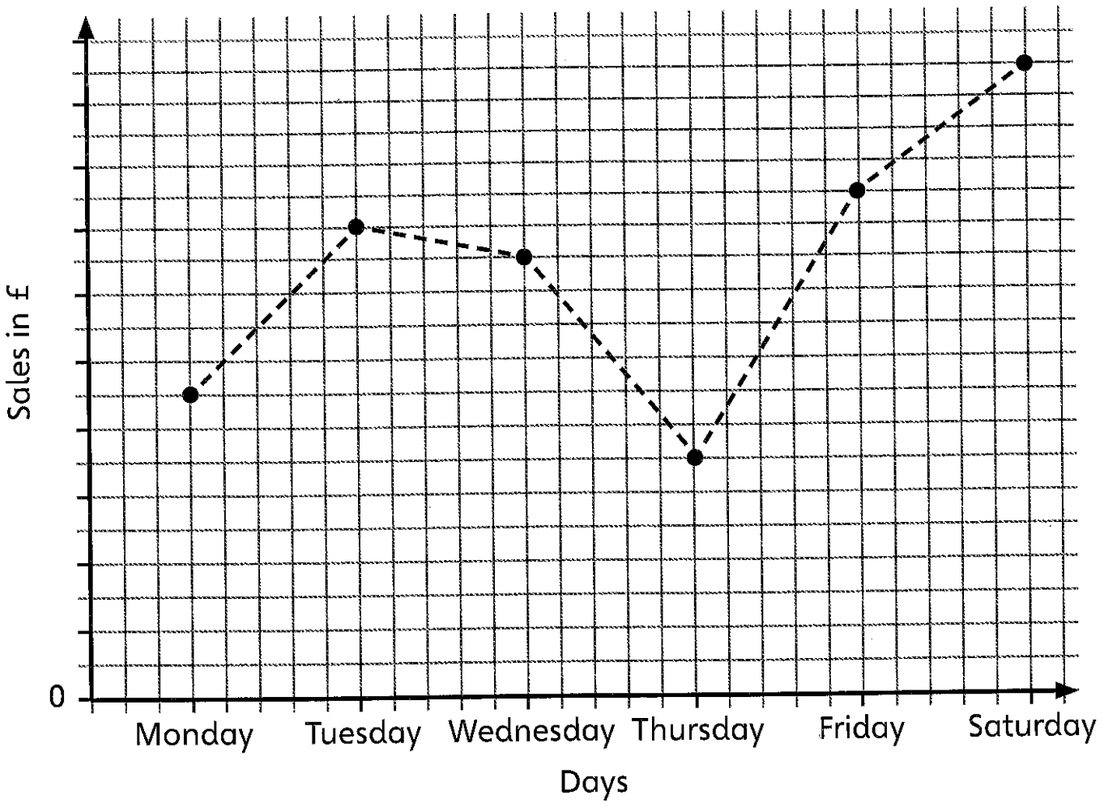
3 Aki has some digit cards. He uses the cards to make a 4-digit odd number that is greater than 6,800 but less than 9,000.

3	6	7	9

What could Aki's number be? Find all the possible answers.

4 The line graph shows the money made each day by a toy shop in a week. The numbers on the scale are missing.

Use the graph to complete the table. Label the scale to help you.



Days	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Sales in £	1,800					

The scale is just like a number line.
I wonder what each interval represents.

5 The population of City X rounds to 483,000 to the nearest 1,000.

The population of City Y rounds to 480,000 to the nearest 10,000.

Jamie says, 'The population of City X must be larger because 483,000 is larger than 480,000.'

Do you agree? Explain your answer.

_____

_____

_____

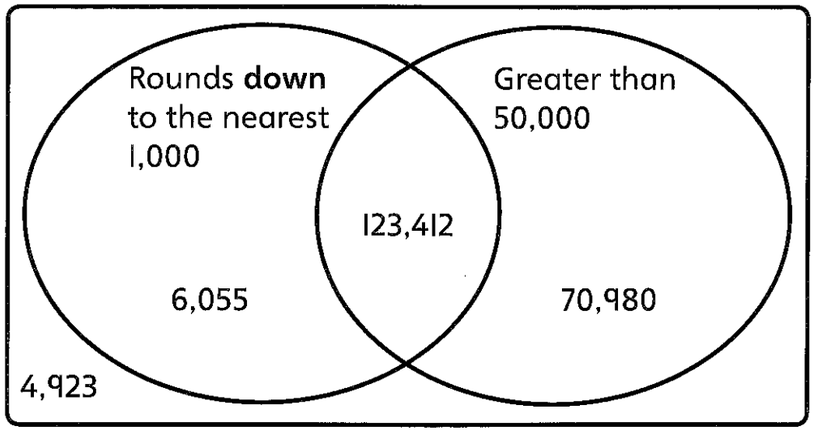
_____

CHALLENGE

I'm going to think about rules for rounding to help me.

Reflect

Write one more number in each section of the sorting circles.



Explain the position of 123,412 in the sorting circles.

_____

_____

_____

_____

Textbook 6C p64

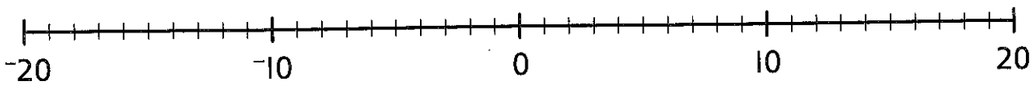
Problem solving – negative numbers

1 Tick the pair of numbers that has the biggest difference.

a) $^{-}4$ and 12 ☐

b) $^{-}8$ and 9 ☐

c) $^{-}20$ and $^{-}11$ ☐



2 **a)** This sequence increases by 7 each time.

What are the missing numbers?

☐, $^{-}16$, ☐, $^{-}2$, ☐, ☐

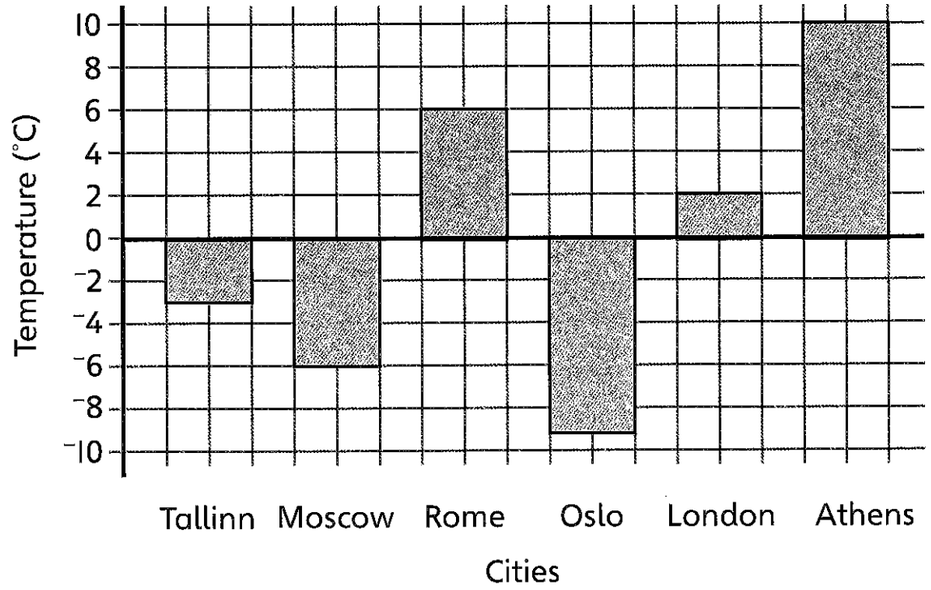
b) Another sequence decreases by the same amount each time.

What are the missing numbers?

19, ☐, 7, ☐, $^{-}5$, ☐

c) What is the 10th number in the sequence in part **b)**? ☐

3 This graph shows the temperature in six cities on one day in January.

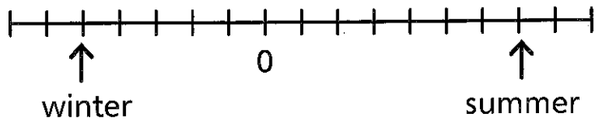


a) Which city was 5 °C warmer than Tallinn? _____

b) Which two cities have a difference in temperature of 11 °C?

_____

4 The number line shows a winter temperature and a summer temperature in Alaska.

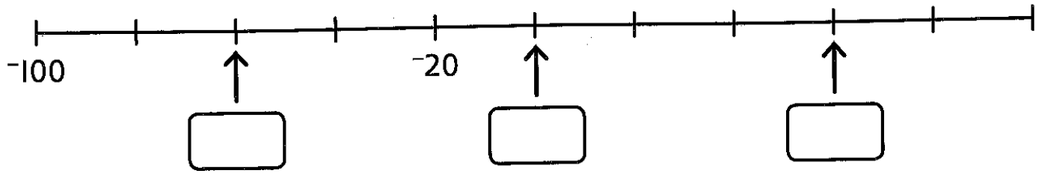


The difference between the temperatures is 48 degrees.

What are the temperatures?

winter temperature = ☐ °C summer temperature = ☐ °C

5 Work out the missing numbers on this number line.

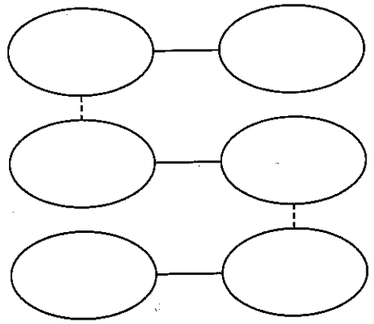


6 Arrange the numbers in the diagram so that the difference between pairs joined by a horizontal line —— is 16 and the difference between pairs joined by a dotted vertical line ¦ is 9.

CHALLENGE

⁻20 5 ⁻13

⁻4 3 ⁻11



Reflect

Explain how to work out the half-way point between 24 and ⁻40.

⇨ Textbook 6C p68

Problem solving – addition and subtraction

1 On Tuesday morning, the number of visitors at an adventure park is 2,365. In the afternoon, 1,790 more visitors arrive but 945 go home.

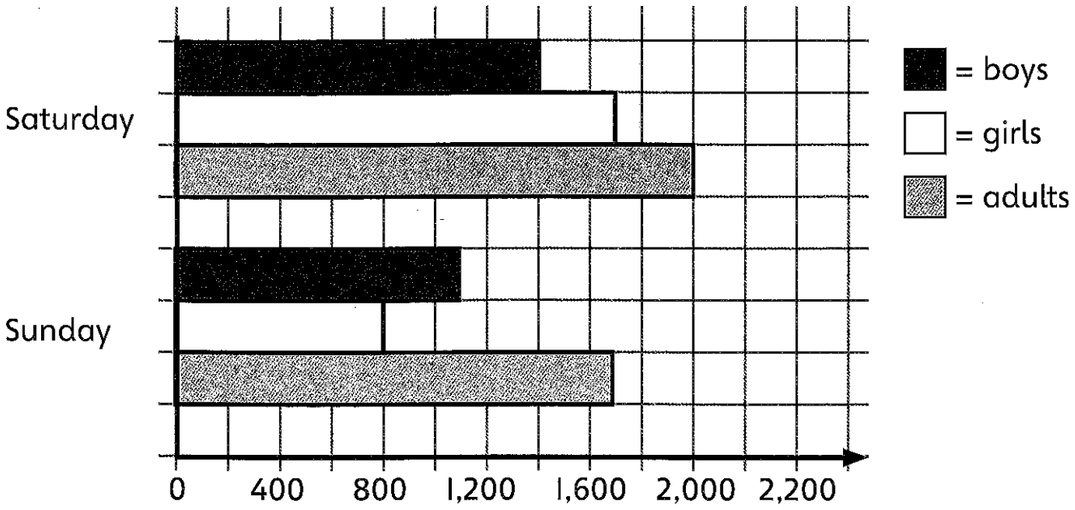
How many visitors are in the park now?

2 Max adds three numbers together. The total is 20,000.

The first number is 4,588. The second number is 12,375.

What is the third number?

3 The bar chart shows the number of visitors at the adventure park over a weekend.



a) How many more children than adults visited the park on Saturday?

b) What is the difference between the total number of children who visited the park on Saturday and Sunday?

4 The Brown family sell cakes at the local fair. In the morning they sell 117 cakes.

In the afternoon they sell 48 fewer cakes.

How many cakes do they sell in total?

5 Write the missing digits to make these calculations correct.

a)

	H	T	O	·	Tth	Hth
		5	3	·		9
+		7		·	8	2
	1	3	2	·	0	

b)

	Th	H	T	O
	9		7	
−	6	1		3
		9	1	8

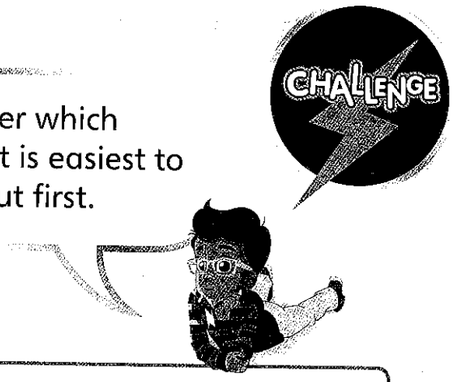
6 Find the value of each shape.

1,250 − △ + △ = ⬠

1,000 + △ = 1,600 − □

700 = □ + □

I wonder which shape it is easiest to work out first.



△ = ▭ □ = ▭ ⬠ = ▭

Reflect

Draw and label a bar model to match the problem in question 4.