

Addendum

BOOK

4

MATHS WISE



PAKISTAN NATIONAL CURRICULUM OF
**REVISED
LEARNING
OUTCOMES**

OXFORD

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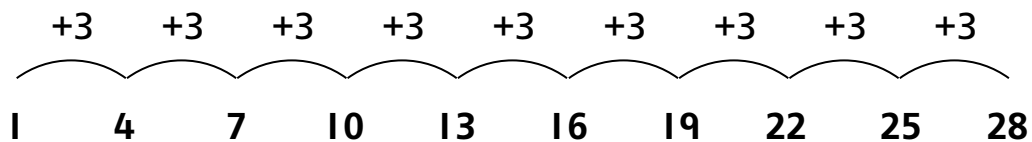
Number Patterns

- Sometimes, there is a common relationship between the numbers in a series, such type of series is called a sequence or a number pattern. The relationship between the numbers may follow any arithmetic operation and known as the rule of the pattern. Numbers can have interesting patterns.

Example 1

- Look at the following series of numbers. This is an arithmetic sequence of numbers and has a difference of 3 between each number.

1, 4, 7, 10, 13, 16, 19, 22, 25, 28



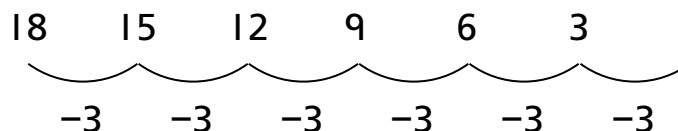
The pattern is continued by adding 3 to the previous number each time. The numbers in this pattern are getting bigger, so this is an increasing pattern.

The pattern rule is add 3 or + 3 to each number.

Example 2

- Look at the sequence given below.

18, 15, 12, 9, 6, 3



We see that 3 has been subtracted from every number to get the next number. We can continue the pattern by subtracting 3 from the previous term to get the next term.

The numbers in this pattern are getting smaller, so this is a decreasing pattern.

The pattern rule is subtract 3 or -3 from each number.

Example 3

► Describe the pattern rule and write next three terms in the given pattern.

0, 4, 8, 12, 16, 20, 24, 28

To find out the rule, we need to consider the first few numbers in the series.

We get the numbers in the pattern, if we count by skipping 4.

The rule is skip counting by 4 or adding 4 to each term.

The next three terms will be:

$$28 + 4 = 32$$

$$32 + 4 = 36$$

$$36 + 4 = 40$$

The sequence will become 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40

Exercise 7

► State the rule, then find the next two terms in the following patterns.

1. 4, 6, 8, 10, _____, _____

Rule: _____

2. 6, 9, 12, 15, _____, _____

Rule: _____

3. 25, 20, 15, 10, _____, _____

Rule: _____

4. 11, 22, 33, 44, _____, _____

Rule: _____

5. 10, 20, 30, 40, _____, _____

Rule: _____

Rounding off

▶ Rounding off is a kind of estimation. Rounding numbers make them simpler and easier although they are not accurate, but they are close to their original values.

You have rounded off whole numbers to the nearest 10 and 100 in previous class. You can round off the numbers to the nearest 1000 by applying the same rules.

▶ **Round off a whole number to its nearest 1000**

- Identify and underline the place value to be rounded off.
- If the number to the right is 0 to 4, we round it down.
- If the number to the right is 5-9, we round it up.

Example 1

Round off 4662 to the nearest 1000.

Multiple of 1000 above 4662 is 5000.

Multiple of 1000 below 4662 is 4000.

The number at thousands place is 4. The number to the right of 4 is 6, which is greater than 5, therefore, the given number is rounded up to 5000.

$$4662 \approx 5000$$

Rounding off a whole number on a number line

▶ First we need to decide to which place value the number is being rounded. Then we create a number line depending upon the place value. Following the same method as done above we mark the rounded value on the number line.

Example 2

▶ Round off 4573 to the nearest 1000 and show it on a number line.

Multiple of 1000 above 4573 is 5000.

Multiple of 1000 below 4573 is 4000.

The number at hundred place is 5. The given number is rounded up to 5000.

$$4573 \approx 5000$$

Draw a number line as given below:



Locate 4573 by a dot on the number line. 4573 is away from 4000 and near to 5000. Mark 5000 on the number line as the rounded value.

Rounding off a decimal (with 1 or 2 decimal places) to the nearest whole number

Follow the simple steps given below to round off a decimal number.

- If the tenth digit is less than 5, round the number down. Remove the decimal part of the number.
- If the tenth digit is 5 or more, then round up the number. Add 1 to the number before decimal and remove the decimal part of the number.

Example 3

Round off 45.7 to the nearest whole number.

Check the number on tenth place; $7 > 5$.

Round up the number and remove decimal part.

$$45.7 \approx 46$$

Now look at the number line.



45.7 is closer to 46, therefore $45.7 \approx 46$

Exercise 12

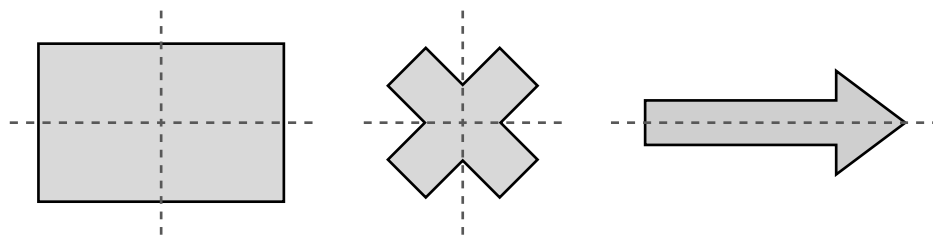
Fill in the blanks.

1. Rounding 72 to the nearest tens equals _____.
2. Rounding 5895 to the nearest thousands place equals to _____.
3. 243 is equal to 200 if rounded off to the nearest _____ place.
4. 11.09 rounded off to the nearest whole number is equal to _____.
5. 124.78 rounded off to the nearest whole number is equal to _____.

Symmetry

- ▶ You have already studied reflective symmetry in two-dimensional shapes.

Look at the following shapes showing reflective symmetry.



The dotted lines are known as lines of symmetry.

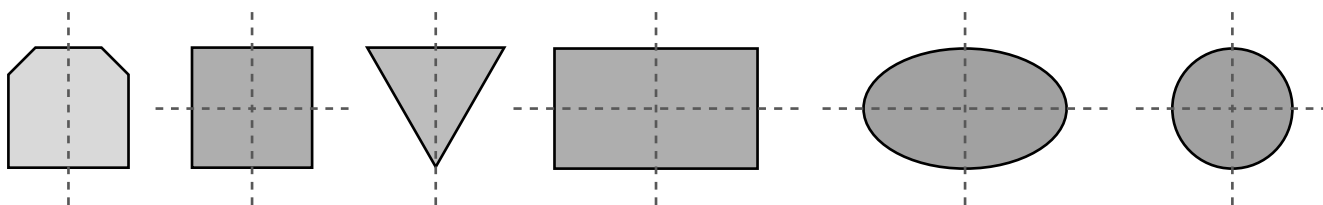
- ▶ If you fold a shape along the line of symmetry, both halves would exactly fit each other.

We observe symmetry in nature and at several place in daily-life.

Look at the symmetry in the following symmetrical objects.

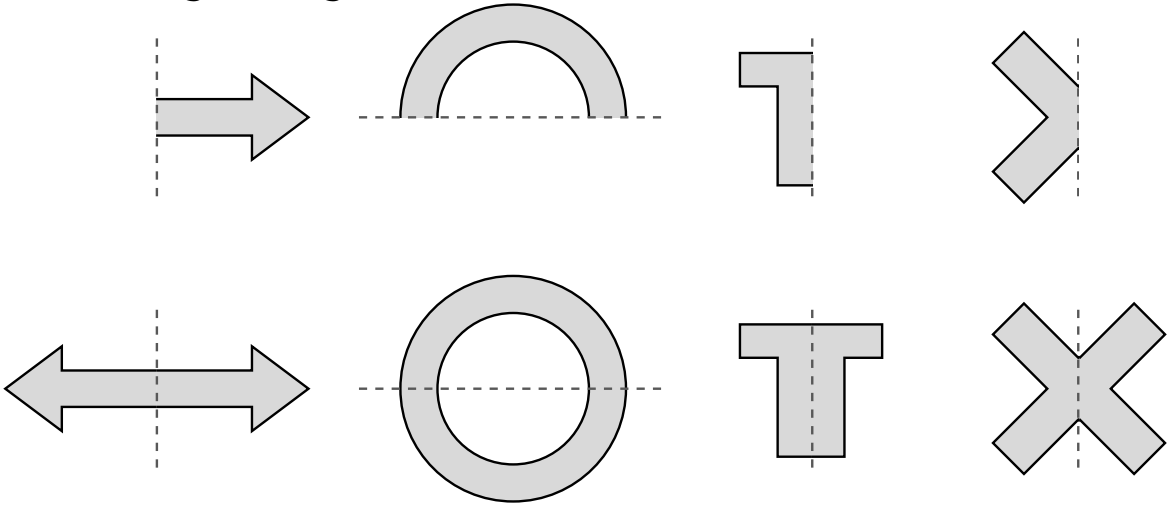


- ▶ **Symmetry in two-dimensional geometrical shapes**



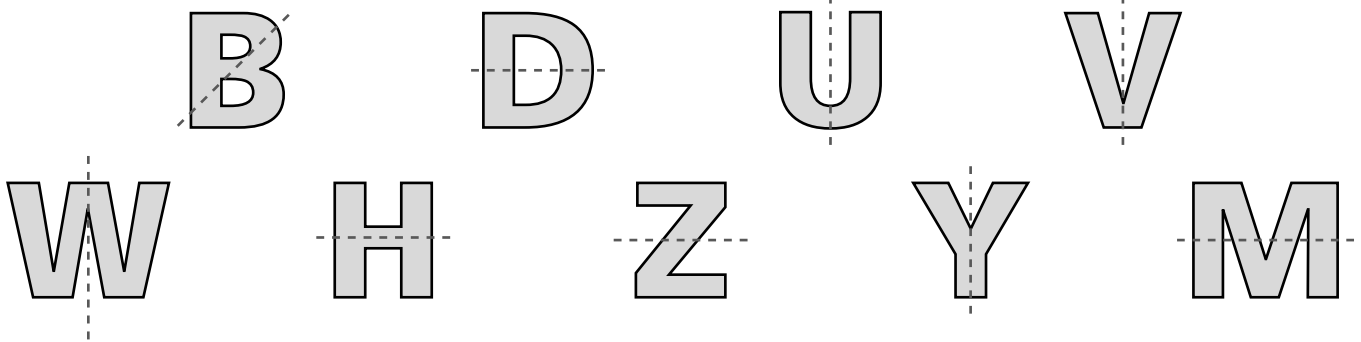
Example 1

▶ Now look at the following shapes. Draw same shapes on the other side of line of symmetry.



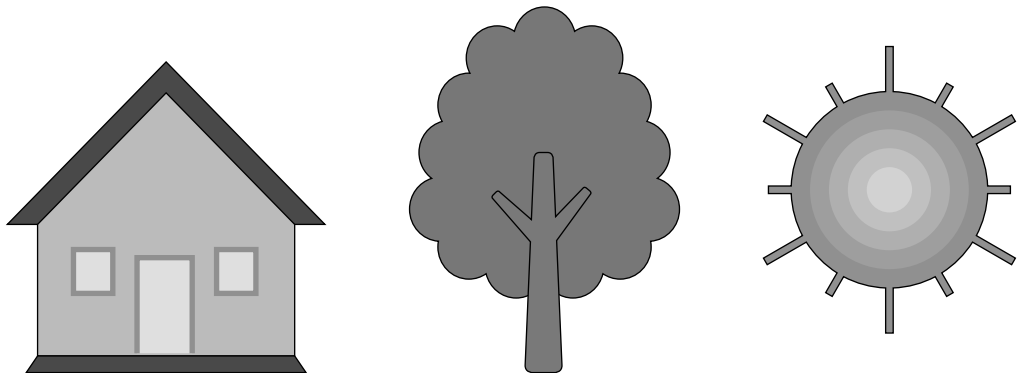
Exercise 10

▶ Does the dotted line on each letter represent a line of symmetry?



Exercise 11

▶ Draw the lines of symmetry in the following illustrations.



Pie charts

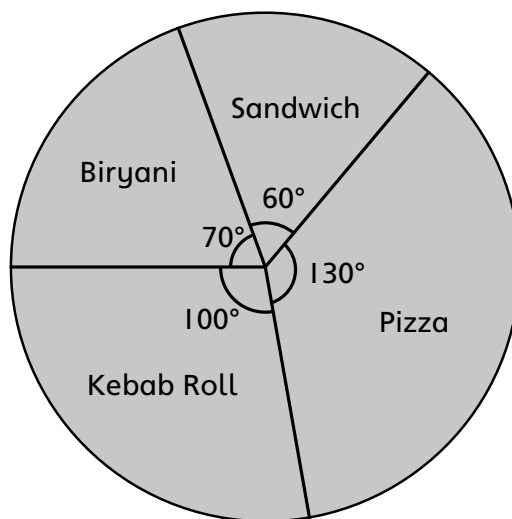
- ▶ Pie charts are generally used to show percentages or proportional data in a set of observations.

They consist of a circle divided into many parts. The different parts show the different amounts or proportions or sizes or numbers of the data.

To interpret a pie chart we look at the size of the slices and angles subtended by them. The size of the slices and angles vary with the values of the data.

- ▶ Looking at the given pie chart, you can easily say that pizza is the most popular food, followed by kebab roll, biryani, and sandwiches.

Favourite Food of Class 4



The least popular food is sandwich because it consists of the smallest slice and angle.

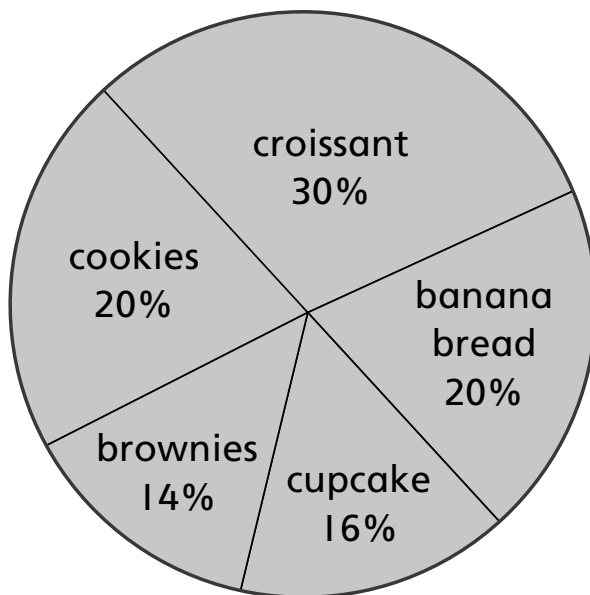
Between biryani and kebab roll, kebab rolls have bigger slice of pie which shows that they are liked more.



Exercise 5

▶ Read the given Pie chart and answer the questions given below.

Sale data of a bakery



1. Which item was sold the most in the bakery?

2. What is the percentage of cookies sold?

3. Did the bakery sell fewer croissant or banana bread?

4. Is the sales % of brownies more than the sales % of cupcakes?

5. What is the percentage of cookies and cupcakes sold altogether?



Maths Wise meets the objectives of the Pakistan National Mathematics Curriculum. The contents of the course meet the requirements of any other curriculum.

Mathematics has always been central to a child's education and is a vital tool in dealing with real-life problems. The main objective of this course is to present lessons in a simple but interesting manner so that students make their own discoveries with some help from the teacher. Each lesson is preceded by a practical activity that helps learning through discovery.

Key features:

- An interactive teaching method is used and lessons include real-life, multi-sensory learning situations.
- The colourfully illustrated books are attractive to learners.
- Plenty of exercises and suggestions for extra activities are included which provide sufficient problem-solving practice for each concept.
- Great emphasis is placed on allowing each student to learn at his/her own pace.
- Teaching Guides, which include extra worksheets, indicate how lessons can be taught in order to derive maximum learning. Suggestions for making attractive charts and a maths lab are also included in the Guides.

Components:

- Introductory Books 1, 2, and 3
- Books 1–8
- Teaching Guides for all levels (available in print as well as on OUP website.)
- Wall charts for Introductory Books 1, 2, and 3

Supplementary reading:

OUP's *Oxford First Maths Dictionary* is recommended as reference material for primary level.

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