

In Training for the Olympics

**A Mathematical Project for
Students**

Barbara Healy BSc BEd



Rio de Janeiro in 2016

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INSTRUCTIONS TO STUDENTS

- The purpose of this unit of work, based on the theme “In Training for the Olympics”, is to help you to revise your mathematics in the context of a problem solving activity.
- Diagrams in this book are not drawn to scale. Use the measurements on each of the diagrams in your calculations.
- Use the answers to the clues to complete the crossword on the last page of this book.

A NOTE TO TEACHERS AND PARENTS

- It has been found that this activity occupies a Junior Secondary student for approximately one week including class time and homework.

Five good reasons to use this project with your students.

- Bring mathematics to life with this project
- Introduce new topics and revise work
- Provide extra work for mathematically gifted students
- Give a sense of achievement to students who find mathematics difficult
- Classroom trials show that students love doing this project

Knowledge needed to train for the Olympic Games

- fractions - addition, subtraction, multiplication, division
- measurement - centimetres, metres
- perimeters and areas of triangles and rectangles
- angles - acute, obtuse, right
- angles in a straight line = 180°
- sum of the angles in a triangle = 180°
- plotting positive values on the X and Y axes
- like terms
- substitution
- addition and subtraction of pronumerals
- cube
- square numbers
- probability with playing cards
- square pyramid
- isosceles triangle
- triangular prism
- hexagon
- cuboid
- percentage
- column graphs
- number puzzles
- logic puzzles
- cryptograms
- magic squares
- indices
- probability with dice



Let the Games begin!

My name is _____

- **I set out to discover some Olympic facts**

at (time) _____

on (day) _____

date _____

- **I found the names of the cities that have hosted the Olympic Games**

at (time) _____

on (day) _____

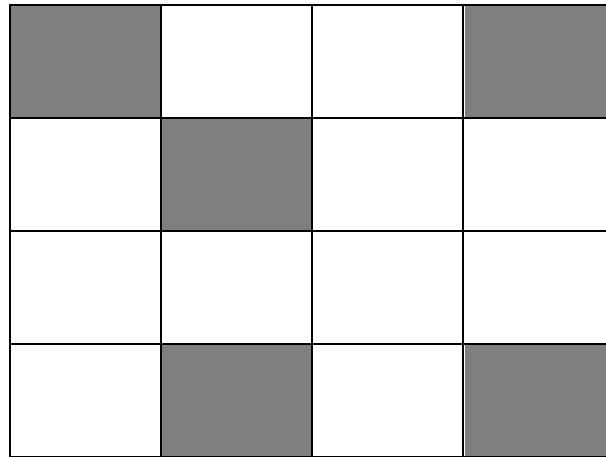
date _____

- **The time taken to solve the problems and to complete the crossword was**

Solve the clues 1 - 6 and find the name of a city that has hosted the Olympic Games.

CLUE 1.

What fraction of the following diagram is shaded?



.....

.....

.....

Write the answer you have found in the box below.

CLUE 1

CLUE 2.

The largest fraction out of $\frac{2}{3}, \frac{1}{4}, \frac{1}{6}, \frac{7}{12}$ is

.....

.....

.....

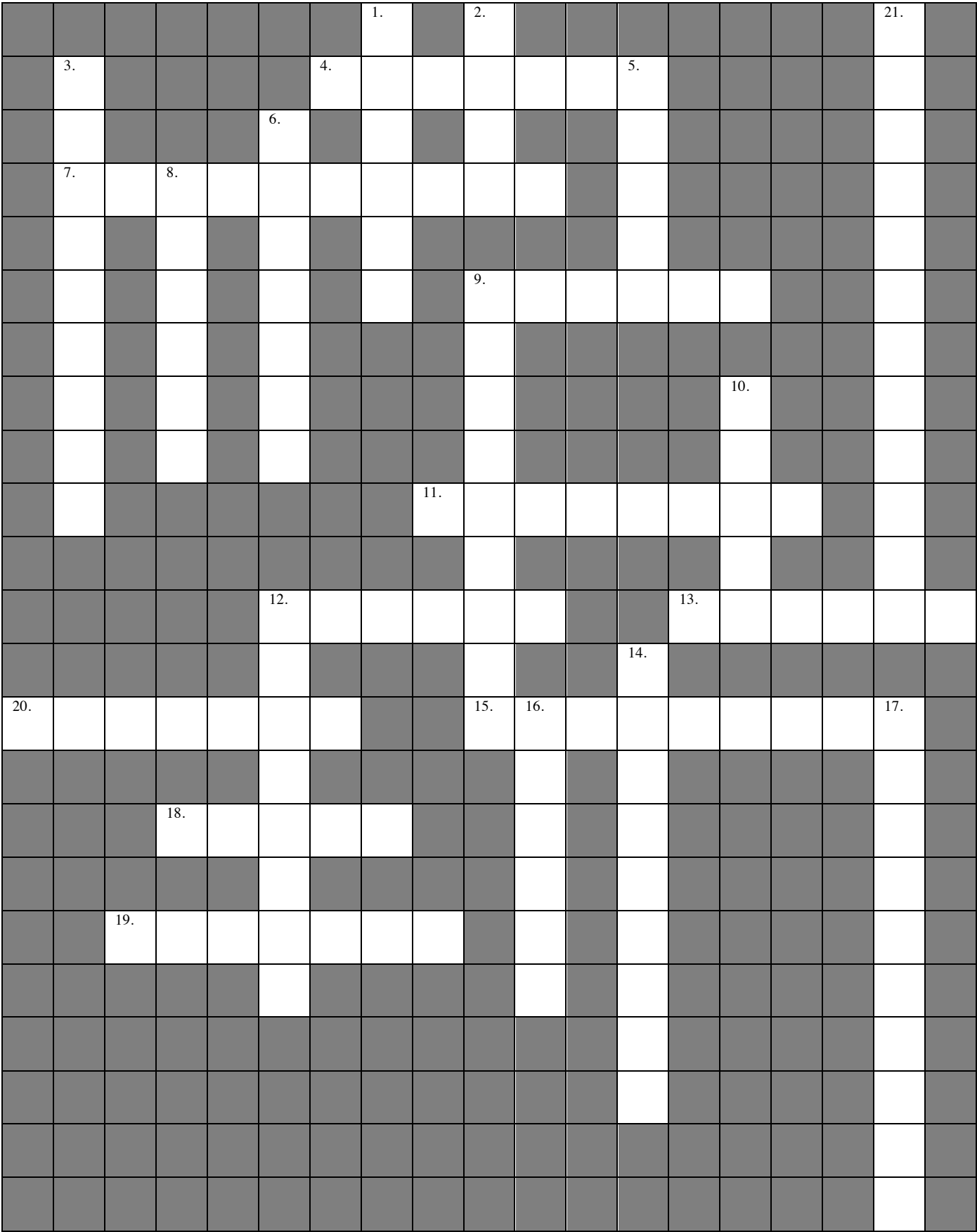
Write the answer you have found in the box below.

CLUE 2



Did you know that the first recorded Olympic Games took place at Olympia in Greece in 776 BC?

Olympic Crossword



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In Training for the Olympics

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In Training for the Olympics



Rio de Janeiro in 2016

Answers

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• Olympic Cities

No.	City	Year	No.	City	Year
1	Athens	1896	16	Mexico City	1968
2	Paris	1900	17	Munich	1972
3	St Louis	1904	18	Montreal	1976
4	London	1908	19	Moscow	1980
5	Stockholm	1912	20	Los Angeles	1984
6	Antwerp	1920	21	Seoul	1988
7	Paris	1924	22	Barcelona	1992
8	Amsterdam	1928	23	Atlanta	1996
9	Los Angeles	1932	24	Sydney	2000
10	Berlin	1936	25	Athens	2004
11	London	1948	26	Beijing	2008
12	Helsinki	1952	27	London	2012
13	Melbourne	1956	28	Rio de Janeiro	2016
14	Rome	1960	29	Tokyo	2020
15	Tokyo	1964	30		2024

The cities which have hosted more than one Olympic Games are:
Athens, London, Los Angeles, Paris, Tokyo

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Rio Olympics

Mathematics and English

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