

REASONING

6ER16

First name _____

Last name _____

School _____

Class _____

Date of birth

Date of test

Total score (maximum 20)



139143



Llywodraeth Cymru
Welsh Government

1

Arrow lands on	Points
gold	9
red	7
blue	5
black	3
white	1



Caryl's 6 arrows land on:

gold, gold, red, blue, blue and black.




Gwen's 6 arrows land on:

gold, gold, white, white, white and white.

Who wins, and by how many points?

Show how you work it out.



She has more points than

wins

2m



Arrow lands on	Points
gold	9
red	7
blue	5
black	3
white	1

To win his game, Jac must score **46** points with his **6** arrows.

His first **3** arrows land on **red, black and black.**

Show why Jac **can't** win.

2m

Jac could score **46** points with **1** arrow on **white** and **5** on **gold.**

Show another two ways for Jac to score exactly **46** points with **6** arrows.

Another way to score
46 with 6 arrows

Another **different** way to score
46 with 6 arrows

2 Adults and children play tug of war.

Rule: For each adult, there are 3 children.

Example:

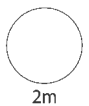


In the first game, 15 **children** play.

Use the rule to work out how many adults play with them.




adults



In the second game, 40 **people** play altogether.

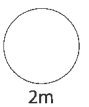
Work out how many are adults and how many are children.



adults

 and

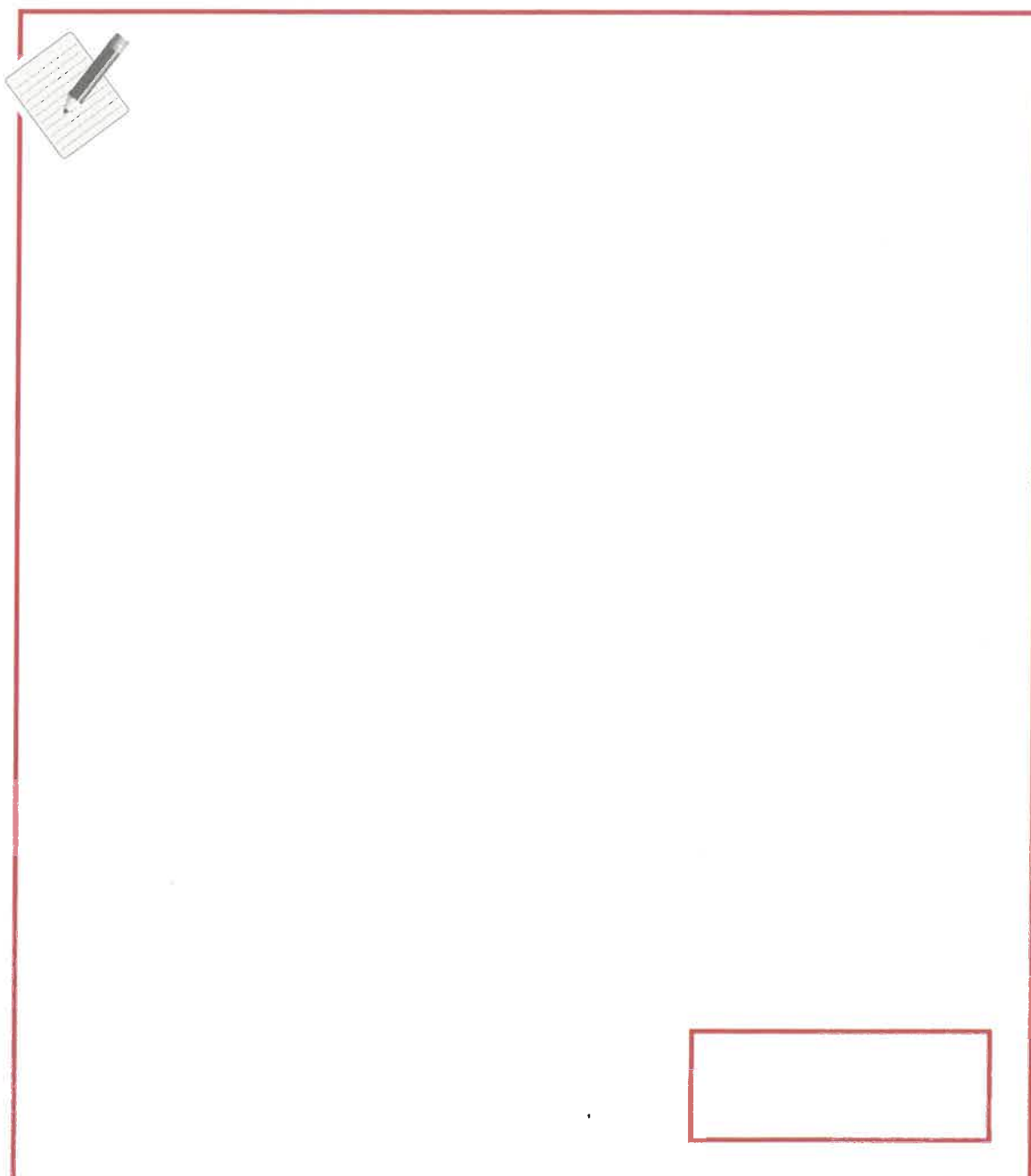
children



3 Three numbers from 1 to 20 include the digit 2

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Work out how many numbers from 1 to 100 include the digit 7



4

The numbers on opposite sides of a dice **always add up to 7**

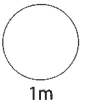
Examples:  is opposite , $3 + 4 = 7$

 is opposite , $2 + 5 = 7$

The numbers on these three dice add up to 17

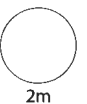
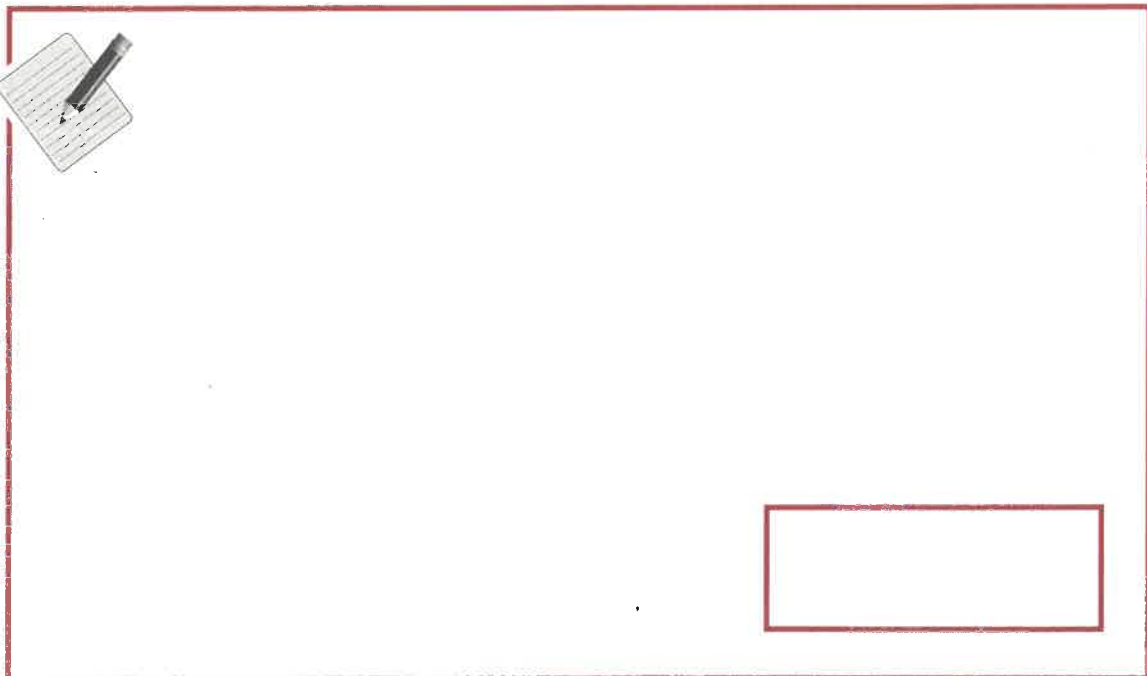


What do the numbers on their opposite sides add up to?



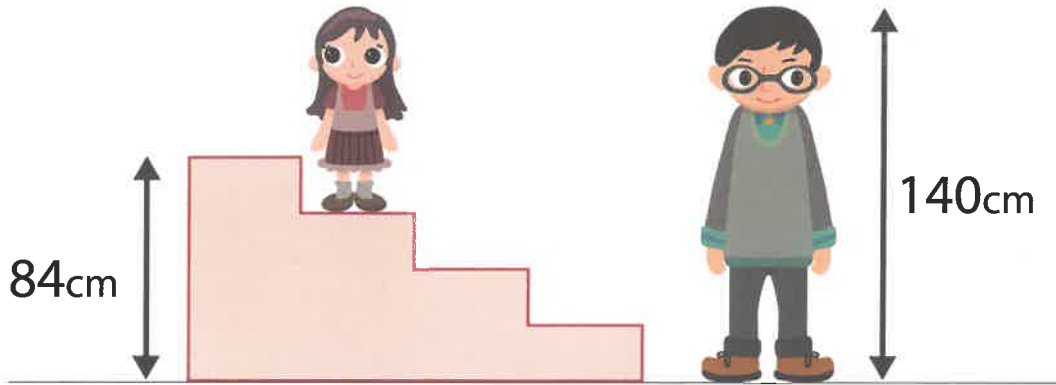
The numbers on **four** dice add up to 5

Work out what the numbers on their opposite sides add up to.

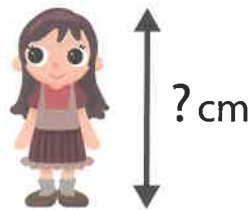


5 This staircase has steps that are all the same height.

When Erin is on the third step, she is exactly the same height as Olek.



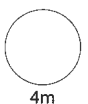
Olek is 140cm tall.



How tall is Erin?

Hint: the answer is **not** 56cm.

A large rectangular box with a red border is provided for the student to write their answer. In the top-left corner of this box, there is a small icon of a notepad with a pencil. In the bottom-right corner of the box, there is a smaller rectangular box containing the text "cm tall".



TOTAL

