

REASONING

6ER16

First name _____

Last name _____

School _____

Class _____

Date of birth ○○ ○○ ○○○○

Date of test ○○ 05 2016

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

2m

TOTAL

6m

2 Adults and children play tug of war.


Rule: For each adult, there are 3 children.

Example:

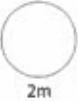


In the first game, 15 **children** play.

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

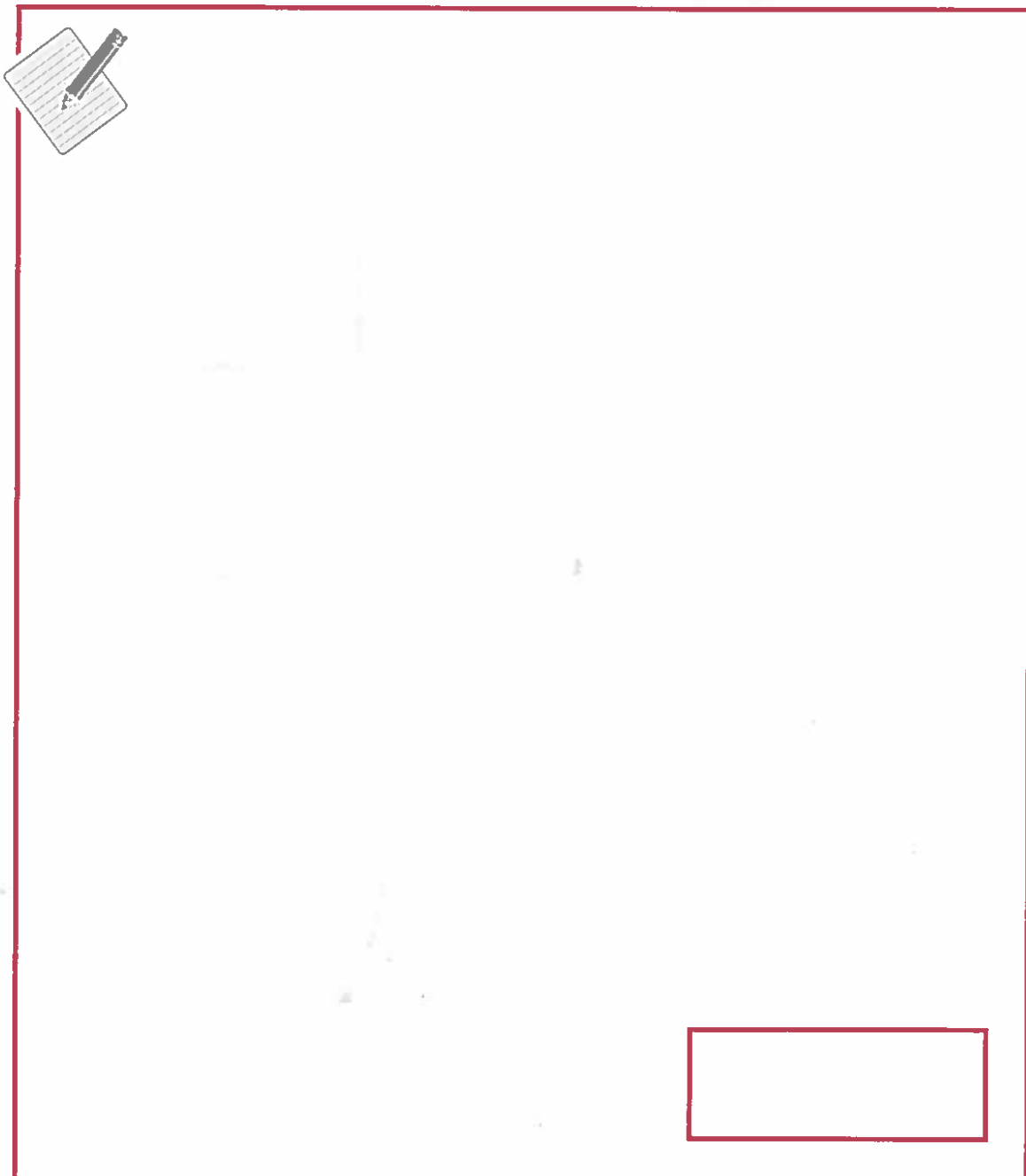
children



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

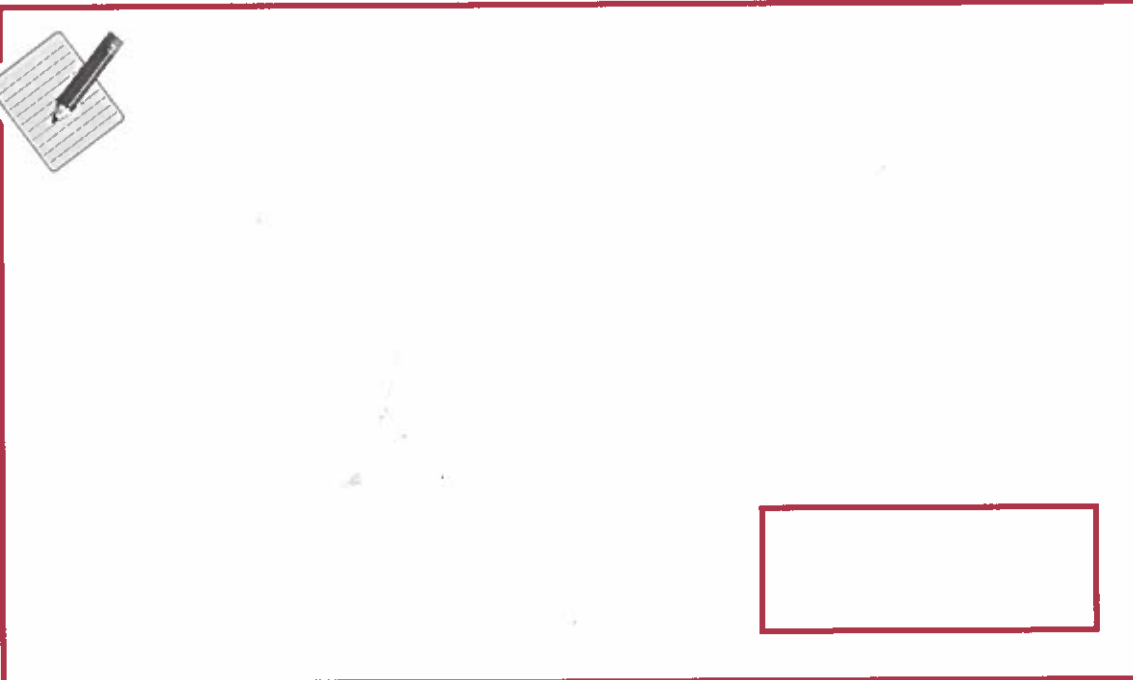


What do the numbers on their opposite sides add up to?



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

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

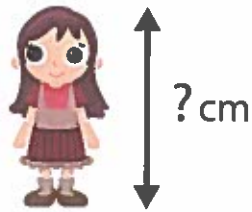


5 This staircase has steps that are all the same height.

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.

Blank area for writing the answer. A small icon of a notepad and pencil is in the top left corner. A box in the bottom right corner contains the text "cm tall".