

REASONING

5ER16

National Numeracy Tests

First name _____

Last name _____

School _____

Class _____

Date of birth ○○ ○○ ○○○○

Date of test ○○ 05 2016

Total score (maximum 20)

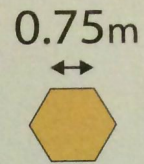
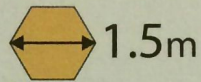
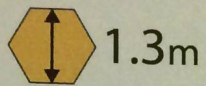


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Llywodraeth Cymru
Welsh Government

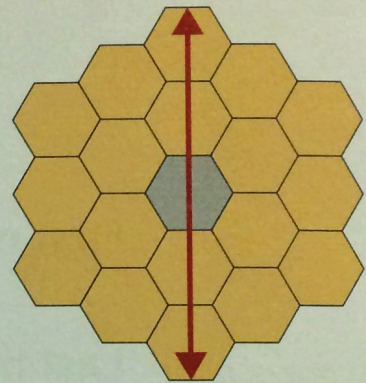
- 1 The diagrams show how tall and how wide the mirrors in the telescope are.



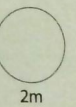
The red arrow shows how **tall** the telescope is.

Work out this height.

A large rectangular box with a red border, intended for the student's answer to the height calculation.



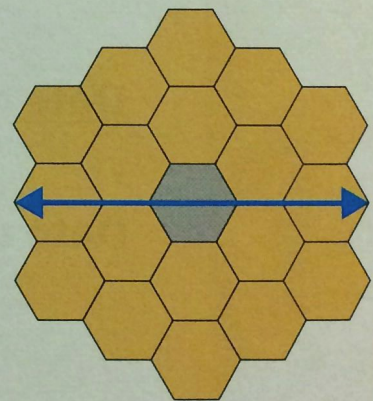
m tall



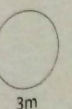
The blue arrow shows how **wide** the telescope is.

Work out this width.

A large rectangular box with a red border, intended for the student's answer to the width calculation.



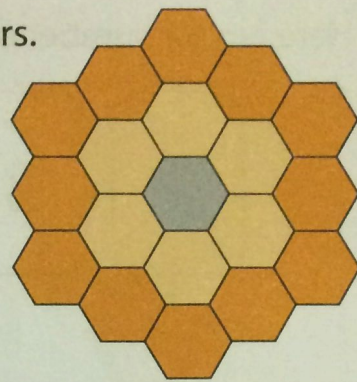
m wide



The telescope has two 'rings' of hexagonal mirrors.

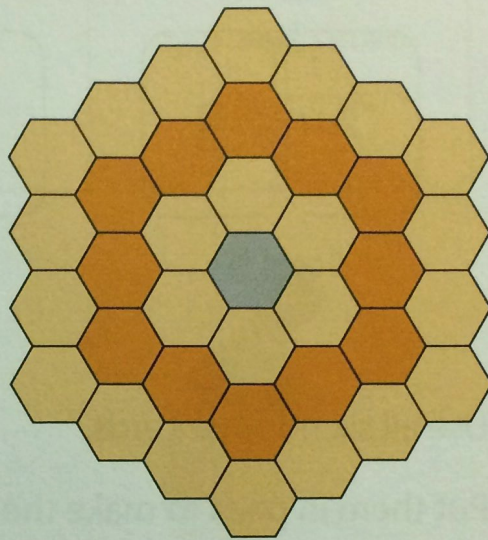
The 1st ring has 6 mirrors.

The 2nd ring has 12 mirrors.



Scientists would like bigger telescopes!

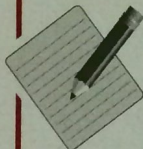
The 3rd ring would have 18 mirrors.



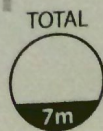
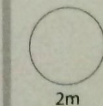
The number pattern continues.

A telescope with 4 rings would have a lot of mirrors!

Altogether, in **all** the rings, how many mirrors would it have?



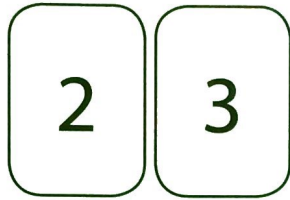
mirrors altogether



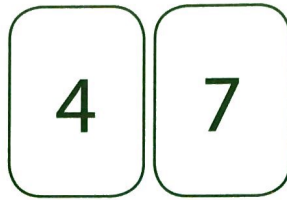
2 Here are six number cards.



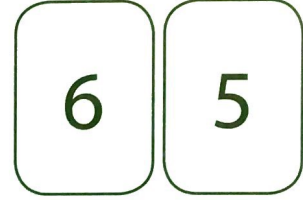
The cards can be put in pairs to make different totals.



Total 5



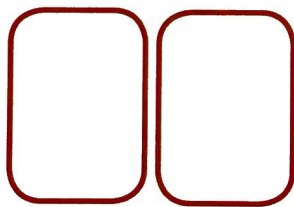
Total 11



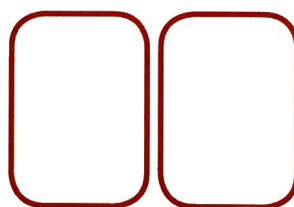
Total 11

Use all six number cards.

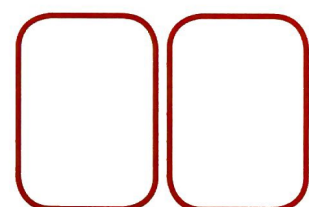
Put them in pairs to make the totals below.



Total 8



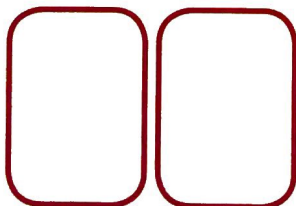
Total 9



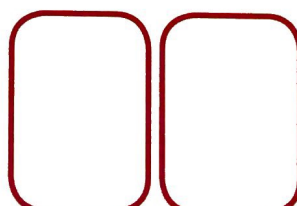
Total 10

Use all six number cards again.

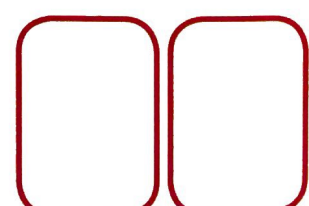
Show **different** pairs that make the totals.



Total 8



Total 9



Total 10



3m

3 Here are some costs to make potato toys.


 <p>pair of eyes cost 10p</p>	 <p>eyes and hat cost 40p</p>	 <p>eyes and shoes cost 55p</p>
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This potato has eyes, hat and shoes.

Work out the cost.

Hint: the answer is **not** 105p.

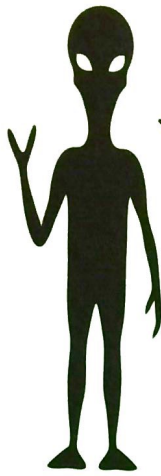




p

4 Eem lives on planet Sparg.

Ifor lives on planet Earth.



Eem

I am 4 Sparg years old.
I am 20 spt tall.



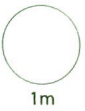
Ifor

I am 12 Earth years old.
I am 140 cm tall.

1 Sparg year = 2 Earth years

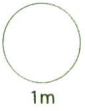
How old is Eem in Earth years?

Earth years



How old is Ifor in Sparg years?

Sparg years



Ifor and Eem are the **same** height, so

1 spt = **cm**



5 In a classroom there are ...

- 28 pupils 

- 1 chair for each pupil and 1 table for each pair



- a teacher 

- a chair for the teacher and her own table.



The people, the chairs and the tables all have legs.

Altogether, how many legs are there?



legs

4m

TOTAL