

# REASONING

## 7ER17

First name \_\_\_\_\_

Last name \_\_\_\_\_

School \_\_\_\_\_

Class \_\_\_\_\_

Date of birth ○○ ○○ ○○○○

Date of test ○○ ○○ 2017

Total score  (maximum 20)

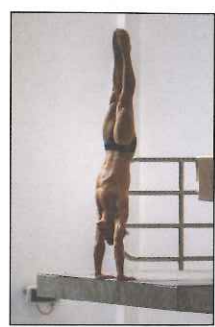


Llywodraeth Cymru  
Welsh Government

1

To find the total score for a dive:

- remove the highest and lowest marks
- **raw score** = sum of the other three marks
- **total score** = raw score  $\times$  dive difficulty



Alun's five marks are:

6.5   6.0   5.5   6.5   7.0

His dive difficulty is 1.8

What is his **total score** for the dive?



Total score =


○  
2m

Tom's raw score is 24.5      His dive difficulty is 2.0

Dylan's raw score is 22.0      His dive difficulty is 2.5

Compare Tom's and Dylan's **total scores**.

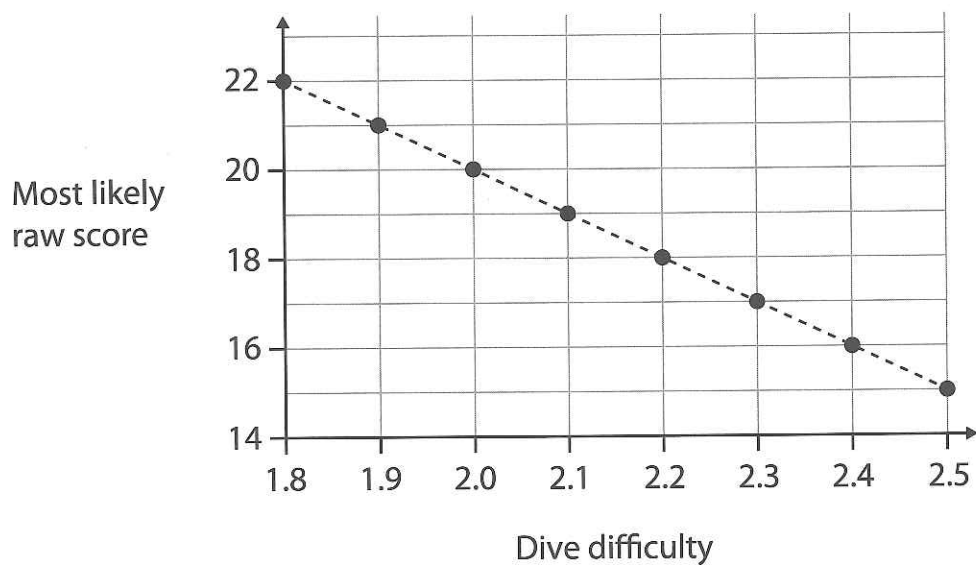
Whose total score is higher, and by how many points?



by      points

○  
2m

The graph shows Jamal's most likely raw score for each dive difficulty.



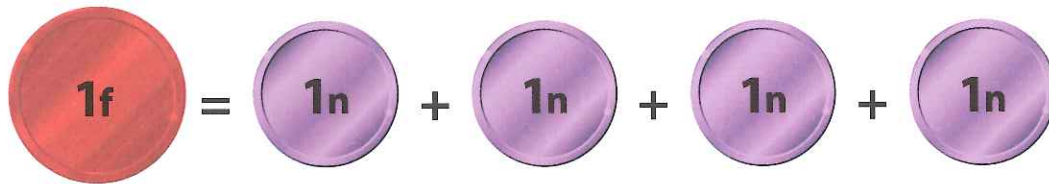
He wants the highest **total score** possible.

Which of these dive difficulties should he choose?

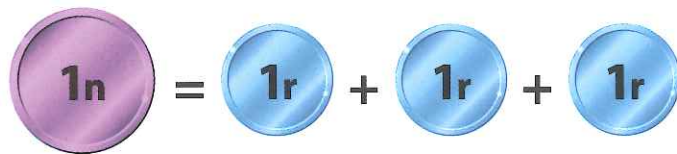
You **must** show calculations to explain your answer.

2 In a game people use coins called f, n and r.

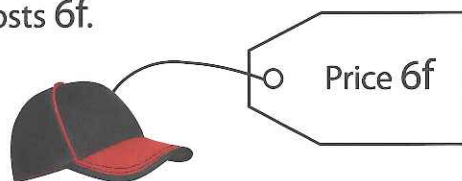
$$1f = 4n$$



$$1n = 3r$$



In the game a hat costs 6f.



Lara has 60r.

Is this enough to buy the hat? Show how you know.

A large rectangular area with a red border, intended for writing the answer. In the top-left corner of this area, there is a small icon of a notepad with a pencil resting on it.

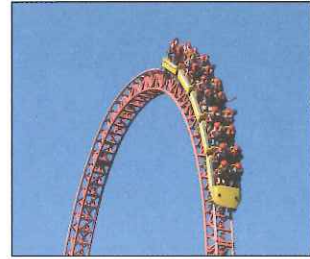


3

The first fairground ride starts at 2pm.

20 people go on each ride.

A new ride starts every 5 minutes.



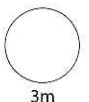
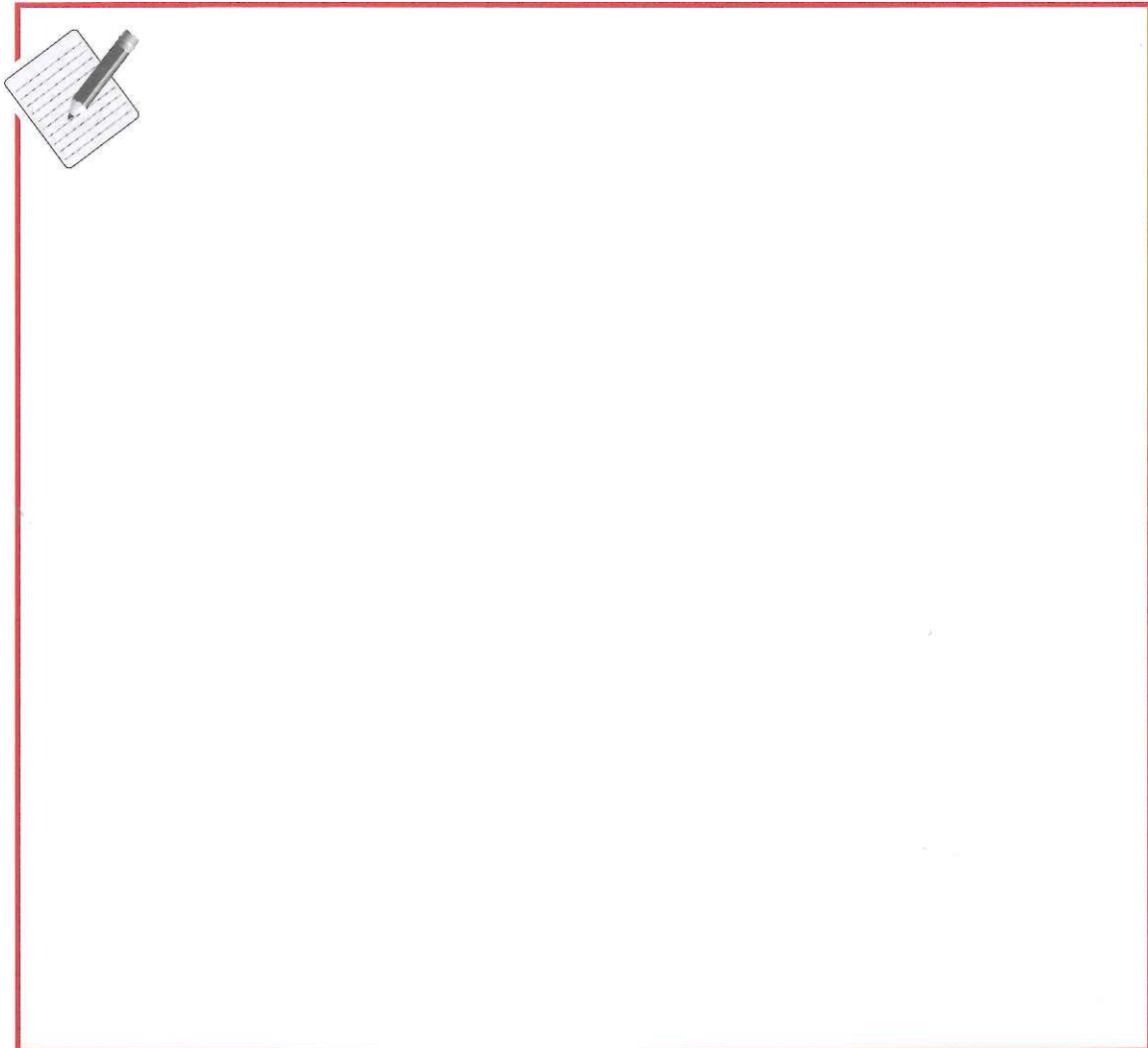
Just before the ride opens, 200 people are in the queue.

A group of 50 young people join the back of the queue.

They know the last ride they can go on is the one that starts at 2.55pm.

Will **all** the young people in the group have time to go on the ride?

Show how you know.



3m



TOTAL







5m


4  and  represent **whole numbers**.

$$\text{star} + \text{pentagon} = 11$$



Work out the greatest possible answer to   $\times$  




  
  
  
  
  
  
  
  
  
  
  $\times$   =


  
2m

 and  are **not** whole numbers.

$$\text{diamond} + \text{cross} = 11$$

Work out the greatest possible answer to   $\times$  

  
  
  
  
  
  
  
  
  
  
  $\times$   =

  
3m

5 A school runs a quiz.

Each game has 3 players.

The winner of each game takes part in the next round in a new group of 3



Rules:

Round 1	All winners from Round 1 take part in Round 2
Round 2	All winners from Round 2 take part in Round 3
Round 3	All winners from Round 3 take part in Round 4
Round 4	The winner of Round 4 wins the quiz

The quiz starts with 81 players in Round 1

By the end of the quiz, how many games have been played?

games altogether