

Problem

In the Grade 6 Students' 100 metre hurdle event, there are 10 hurdles. The first hurdle is 13 metres from the starting line. Consecutive hurdles are 8 metres apart. How far is the tenth hurdle from the finish line? (Note: 'consecutive' means one right after the other.)

*Extension:*

In an 80 metre hurdle race, the distances between hurdles are equal, the first hurdle is 12 metres from the starting line, and the last hurdle is 12 metres from the finish line. If there are 8 hurdles in all, how far apart are consecutive hurdles?

Hints

Hint 1 - How could you draw a diagram of the track and hurdles?

Hint 2 - How many spaces are there between the first hurdle and the last one?

Hint 3 - Remember, the first hurdle is at 13 meters. Where is the second hurdle? The third?

Hint 4 - Remember, the question asks how far the 10th hurdle is from the **finish** line.

Solution

There are 9 spaces between the 10 hurdles; each space has length 8 metres. Thus the distance between the first and last hurdle is $9 \times 8 = 72$ metres. Adding the 13 metres from the starting line to the first hurdle gives 85 metres. Thus the tenth hurdle is $100 - 85 = 15$ metres from the finish line.

Start | 13m | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 15m | Finish

Extension:

The distance available for the spaces between the hurdles is 56 metres ($80 - 12 - 12$). Since there are 7 spaces between the 8 hurdles, consecutive hurdles are $56 \div 7 = 8$ metres apart.