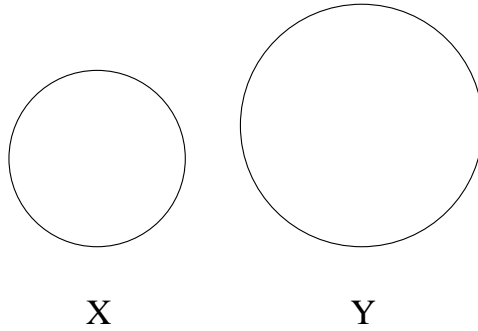


Math League Relay Questions

1. In the diagram, the circumference of circle Y is 2π centimetres more than the circumference of circle X .



Also, the radius of circle Y is \mathbf{A} centimetres more than the radius of circle X .

Write down \mathbf{A} in Box 1 of the Relay Answer Sheet.

2. The roots of the quadratic equation $x^2 - 8x + 15 = 0$ are 3 and 5.

The roots of the quadratic equation $x^2 - 8x + \mathbf{B} = 0$ are $3 - \mathbf{A}$ and $5 + \mathbf{A}$.

Write down \mathbf{B} in Box 2 of the Relay Answer Sheet.

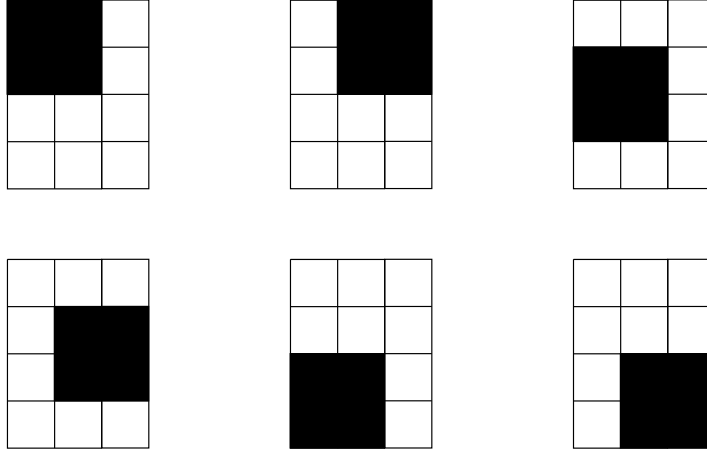
3. Let x and y be numbers such that $x - y = 2$ and $x^2 - y^2 = \mathbf{B}$.

Let \mathbf{C} represent the value of the product xy .

Write down \mathbf{C} in Box 3 of the Relay Answer Sheet.

4. Consider a 4 by 3 checkerboard, with 12 unit squares. There are exactly six ways that a square of side length 2 can be placed on this checkerboard.

These six ways are illustrated below:



Consider a 4 by C checkerboard with $4C$ unit squares. There are exactly D ways that a square of side length 2 can be placed on this checkerboard.

Write down D in Box 4 of the Relay Answer Sheet.

Hand in the completed sheet to your proctor.