### 9th September

**Problem 1**

Shown is a right angle triangle

![Right Angle Triangle](image)

Calculate the lower bound for $x$.

- $y = 8.5\text{cm}$ correct to the nearest mm
- $z = 9.6\text{cm}$ correct to the nearest mm

**Problem 2**

Given

$$3x - 4 : x + 1 = 2x + 9 : 4x$$

Find the possible values of $x$

**Problem 3**

Here are the first 5 terms of a quadratic sequence

| 4 | 10 | 18 | 28 | 40 |

Find an expression, in terms of $n$, for the $n$th term of this quadratic sequence.

**Problem 4**

The histogram shows the weights in kilograms of 504 athletes.

- 45 athletes weigh under 60kg.
- Calculate an estimate of the number of athletes between 70 and 95kg.