Math Diversion Problem 740

P. Reany

July 26, 2025

The YouTube video is found at:

```
Source: https://www.youtube.com/watch?v=n3wTj2Os2bE
Title: The average age of three boys is 15 years.
 Presenter: Mr Math
```

1 The Problem

The average age of three boys is 15 years. If their ages are in ratio 3:5:7, what is the age of the youngest boy?

2 The Solution

From youngest to oldest, let the boys's ages be x, y, z. Since their average age is 15, we can write

$$\frac{x+y+z}{3} = 15\,. \tag{1}$$

Their age ratios are given by

$$x : y : z = 3 : 5 : 7\,. \tag{2}$$

This equation holds three smaller equations, but we only need two of them:

$$\frac{x}{y} = \frac{3}{5} \quad \text{and} \quad \frac{x}{z} = \frac{3}{7}\,. \tag{3}$$

Form this we can write

$$y = \frac{5x}{3} \quad \text{and} \quad z = \frac{7x}{3}\,. \tag{4}$$

On substituting these values into (1), we have that

$$\frac{x + \frac{5x}{3} + \frac{7x}{3}}{3} = 15\,. \tag{5}$$

And so we get $x = 9$.