



Solve the simultaneous equations

$$\begin{aligned}2x - y &= 7 \\ xy &= 15\end{aligned}$$

Rhys has a large tub of yellow counters. Alex has a large tub of blue counters. 40 yellow counters are taken from Rhys' tub and placed into Alex's tub. 40 blue counters are taken from Alex's tub and placed into Rhys' tub.

Rhys randomly selects 100 counters from his tub.
8 of the 100 counters are blue.

Alex randomly selects 50 counters from his tub.
48 of the 50 counters are blue.

All the counters are then placed into one tub.

Work out an estimate for the ratio of yellow to blue counters in the tub.

Solve to two decimal places

$$\frac{x - 4}{x + 5} - \frac{3x - 2}{x + 1} = 1$$

Write

$$\frac{1}{1 + \frac{1}{\sqrt{6}}}$$

in the form $a(b - \sqrt{6})$ where a and b are constants to be found.