10th November

Solve the simultaneous equations

\[ 7x - 15y = 2.5 \]
\[ 3x - 2y = 5.5 \]

Simplify fully

\[
\frac{x^2 + 8x}{x^2 + 10x + 16}
\]

A greengrocer sells bananas and apples. In one day he sells
up to 80 bananas
up to 90 apples
no more than a total of 110 pieces of fruit
Let \( x \) be the number of bananas sold
Let \( y \) be the number of apples sold.

Show the region below that satisfies these inequalities

Given that

\[ a : b = 5 : 2 \quad \text{and} \quad b : c = 9 : 11 \]

Find the ratio \( a : c \)

Give your answer in its simplest form.