

Rewrite Equations Problem

in class, I wrote "a" not 9, but it should be 9.

$$\frac{64 \cdot \cancel{a} \cdot b(a+b)}{a} = \frac{9 \cdot \cancel{a} \cdot b(a+b)}{b} = \frac{55 \cdot a \cdot b(a+b)}{\cancel{a+b}}$$

$$64b(a+b) - 9a(a+b) = 55ab$$

$$\begin{array}{r} 64ab + 64b^2 - 9a^2 - 9ab = 55ab \\ -55ab \qquad \qquad \qquad -55ab \\ \hline \end{array}$$

$$\cancel{9ab} + 64b^2 - 9a^2 - \cancel{9ab} = 0$$

$$\begin{array}{r} 64b^2 - 9a^2 = 0 \\ +9a^2 \quad +9a^2 \end{array}$$

$$\frac{64b^2}{64} = \frac{9a^2}{64}$$

$$b^2 = \frac{9a^2}{64}$$

$$b = \pm \sqrt{\frac{9a^2}{64}}$$

$$b = \pm \frac{3a}{8}$$