

You're given $\frac{1}{f} = \frac{1}{f_1} + \frac{1}{f_2}$

1) First combine the two fractions on the right into one fraction. $\frac{1}{f} = \frac{f_2}{f_2 \cdot f_1} + \frac{f_1}{f_2 \cdot f_1}$

1a) Here, $f_2 \cdot f_1$ is the common denominator.

1b) For example, $\frac{1}{f_1} \cdot \frac{f_2}{f_2} = \frac{f_2}{f_1 \cdot f_2}$ You have to multiply by $\frac{f_2}{f_2}$, which is a fancy way of writing 1.

2) Now rewrite so you have only one fraction on the right. $\frac{1}{f} = \frac{f_2 + f_1}{f_2 \cdot f_1}$

3) Now flip to get f by itself. $f = \frac{f_2 \cdot f_1}{f_2 + f_1}$