YOU & MATHS **Phil's thinking** Phil replaced a with 4 to prove that when reduced to lowest terms $\dfrac{a+4}{a+8} = \dfrac{2}{3}$. Was he correct?

Assigning value 4 to a, Phil obtained the fraction $\dfrac{4+4}{4+8}$, which he then tried to simplify. This can be done in different ways.

For example, you can compute the sums and get $\dfrac{8}{12}$, which simplified is $\dfrac{2}{3}$, like Phil got. However, in general this

simplification cannot be done. For example, if $a = 0$ he would have got $\dfrac{4}{8} = \dfrac{1}{2} \neq \dfrac{2}{3}$.

So Phil did not reason in general terms and was incorrect.