

Cooks and Pies

It takes 10 cooks 10 hours to bake 10 pies.

How many hours will it take 20 cooks to bake 20 pies?

Initially it takes 1 cook 10 hours to bake one pie each. If you double the number of cooks and double the number of pies, it will still be the case that one cook bakes one pie each, which from the first part takes 10 hours.

Suppose that 12 cooks took 6 hours to bake 60 pies. How long would it take to 18 cooks to bake 120 pies?

There are $\frac{18}{12} = \frac{3}{2}$ times as many cooks to share the work, so they would bake the same number of pies in $\frac{2}{3}$ of the time, but there are $\frac{120}{60} = 2$ times as many pie to bake so 18 cooks would take $6 \times \frac{2}{3} \times 2 = 8$ hours.