

Problem. 4 kitchen assistants can prepare 10 kg of vegetables in 30 minutes. How long would it take 20 assistances? Please show your work.

Solution. By x denote mass of vegetables that 1 kitchen assistant can prepare in 1 hour. Hence, 4 assistances can prepare $4x$ kg per hour, or $2x$ in half an hour(30 minutes). So, $2x = 10$, which gives us $x = 5$ kg of vegetables per hour by 1 assistant. Thats why 20 assistances can preapre $20 \cdot x = 100$ kg of vegetables per hour. By t denote the time, which takes 20 assistants to prepare 10 kg of vegetables. One can get the equation $10 = 100 \cdot t$, hence $t = 1/10$ of hour, that is 6 minutes.

Answer. 6 minutes.