

Problems on combined work

№1. Two teams working together can complete a production task in 8 days. If the first team completes $\frac{1}{3}$ of the task working alone and is then replaced by the second team, the task will be completed in 20 days. How many days would each team need to complete the task working alone?

№2. If two pipes are opened simultaneously, a pool will be filled in 12 hours. If the pool is first filled only through the first pipe for 5 hours and then only through the second pipe for 9 hours, half of the pool will be filled. How many hours does it take to fill the pool through each pipe?

№3. Three pipes supply water to a tank with a capacity of 500 m^3 . For some time, water was supplied only through the first pipe into the initially empty tank. Then the first pipe was closed and the other two pipes were opened and worked together until the tank was filled; these two pipes worked for twice as long as the first pipe. If these two pipes had worked for 12 hours 30 minutes, they would have supplied the same amount of water as the first pipe supplied during its operating time. Determine how long the first pipe worked, given that 300 liters of water flowed through it into the tank each minute.

№4. Water began to be poured simultaneously into two identical pools. Each hour, 30 m^3 more water flows into the first pool than into the second. At some moment, the total amount of water in both pools equaled the volume of one pool. After that, the first pool was filled in 2 hours 40 minutes, and the second pool was filled 3 hours 20 minutes later. How much water flowed into each pool per hour?