

2025 August AMC 10 Week 2 Day 3 - Work and Efficiency Problems

- 1 Teams A , B , and C jointly undertake two projects, A and B . The workload of project B is $\frac{4}{5}$ of the workload of project A . If working alone, Teams A , B , and C can complete project B in 40, 48, and 60 days respectively. At the beginning, Teams B and C work together on project A , while Team A works alone on project B . After working for a certain number of days, the arrangement changes so that Team B works alone on project A , while Teams A and C work together on project B . Both projects are completed at the same time. How many days did Team C work on project B ?

A. 3 B. 4 C. 5 D. 6 E. 7

- 2 Liam is processing a batch of parts. If he makes 50 parts per day, he will finish 8 days later than originally planned. If he makes 60 parts per day, he will finish 5 days earlier than originally planned. How many parts are in this batch?

A. 3500 B. 3600 C. 3700 D. 3800 E. 3900

- 3 To build a water channel, Team A can finish the job alone in 20 days, and Team B can finish it alone in 30 days. If they work together, their efficiency decreases due to interference: Team A 's efficiency becomes $\frac{4}{5}$ of its original, and Team B 's efficiency becomes $\frac{9}{10}$ of its original. The plan is to complete the channel in 16 days, with the goal of minimizing the number of days they work together. How many days should the two teams work together?

A. 30 B. 20 C. 15 D. 10 E. 5

- 4 Teams A and B are responsible for a project. At the normal rate of work, it would take 60 days to complete. Now, Team A 's efficiency increases by one-half, and Team B 's efficiency decreases by one-half, and the project takes 84 days to finish. How many days would it take Team A alone to complete the project?

A. 230

B. 250

C. 260

D. 280

E. 290

5

A group of workers is assigned to load and unload a batch of goods, with each worker working at the same rate.

If all workers work together from the start, the job can be completed in 10 hours.

Now, the method is changed: one worker starts alone, and then every t hours (where t is an integer) one more worker joins.

Each worker who joins continues working until the job is finished.

The last worker added works for a time equal to one quarter of the first worker's total working time.

What is the maximum number of workers that can be used to complete the job?

A. 7

B. 11

C. 13

D. 15

E. 19