

Portola Math Club

Do you like interesting logic and math problems? Join the Portola Math Club. Club members can relax during lunchtime by attempting mighty feats of logic, clever math manipulations or plain old brain busters. Interested students enter prestigious math competitions, and win! We have fun.

Try the problems below. Answers will be available at our first math club meeting.

1. A “section” of land is one square mile. There are 160 acres in one quarter-section of land. If one acre of land produces 42 bushels of soybeans which can be used to make 2,500 gallons of soymilk, how many gallons of soymilk can be produced from one section of land that is fully planted with soybeans?

2. A small construction company has 8 identical jobs to do. With everyone working at the same rate, it takes 8 workers 6 days to complete 3 identical jobs. If 3 of the workers leave and each of the workers maintain their working pace, how long will it take the remaining 5 workers to complete the remaining 5 jobs.

3. At a factory, the machines are run for 10 hours per day. With the current equipment, part A was produced at a rate of 50 parts per minute with an accuracy rate of 96% (96% of the parts produced met quality control standards). The factory just purchased a new machine that is supposed to produce part A at a rate of 48.5 per minute with 99% accuracy. At the end of a 10 hour day, how many more part As should meet the quality standards when using the new machine than when using the current machine?

4. In the problem $\frac{7^{48} - 7^{47} - 7^{46}}{41} = 7^x$, what is the value of x?

We will meet during lunch (4th and 5th periods) in Room 126. Bring your lunch (eat neatly!) and come directly to 126. Please behave as you should in the classroom. Anyone disrupting Math Club activities will be asked to leave.