

Challenge Homework

1. Today, both the soccer team and the basketball team had games. The soccer team plays every 3 days and the basketball team plays every 5 days. When will both teams have games on the same day again?
2. Karen has two pieces of cable, one 7 feet long and the other 14 feet long. For a science project, she wants to cut them up to produce many pieces of cable that are all of the same length, with no cable left over. What is the greatest length, in feet, that she can make them?
3. Steve can save 9 dollars every day while Maria can save 12 dollars. What is the least number of days it will take each person to save the same amount of money?
4. A radio station plays "yesterday" by the Beatles once every 2 days. Another station plays the same song once every 3 days. How many times in 30 days will both radio stations play the same song on the same day?
5. Two men running a marathon took a sip of water at the same time 72 minutes after they started the race. If the first man took a sip of water every 9 minutes, how often did the other man take a sip of water?
6. A train to New York city leaves a station every 7 minutes. Another train to Boston leaves the station every 6 minutes. Suppose it is 6:30 am right now. At what time will both trains leave the station together?

7. For which pair is the greatest common factor 8?

- a. 2 and 4
- b. 7 and 15
- c. 32 and 64
- d. 56 and 72

8. Tim is posting 18 flyers for the science club and 20 for the music club. He wants to make all the locations identical, with the same combination of science club flyers and music club flyers. In addition, he wants to make sure that no flyers are left over. What is the greatest number of locations that Tim can post at?

9. Suppose cicadas have predators with 2-year cycles. How often would 12-year cicadas face their predators? Would life be better for 13-year cicadas? Explain.

10. Shing has 20 blue marbles and 16 white ones. If he wants to place them in identical groups without any marbles left over, what is the greatest number of groups Shing can make?