

1. Anne and Maria play tennis almost about every weekend. So far, Anne has won 12 out of 20 matches.

a. How many matches will Anne have to win in a row to improve her winning percentage to 75%?

b. How many matches will Anne have to win in a row to improve her winning percentage to 90%?

c. How many matches will Anne have to win in a row to improve her winning percentage to 99%?

d. Can Anne reach a winning percentage of 100%? Explain why or why not.

e. After Anne has reached a winning percentage of 90% by winning consecutive matches as in part (b), how many matches can she now lose in a row to have a winning percentage of 50%?

2. Working together, it takes Sam, Jenna, and Francisco two hours to paint one room. When Sam is working alone, he can paint one room in 6 hours. When Jenna works alone, she can paint one room in 4 hours.

a. Determine how long it would take Francisco to paint one room on his own.

b. If Francisco works twice as fast, how long will it take for all three to paint the one room?

3. Mr. Drowns is making a serum to help students remember more math facts. He has a solution containing 10% RedBull (R) and a different solution containing 30% RedBull (R).

a. How much of the 30% solution must you add to 1 liter of the 10% solution to create a mixture that is 22% RedBull?