

## Answer on Question #42729– Math – Linear Algebra

### Question:

A tank is fitted with two taps A and B of different size. If both the taps are opened simultaneously it takes 4 hours to fill the tank. If only tap A is opened for 1 hour and then only tap B is opened for 4 hours the tank becomes half. Find the time taken by tap B alone to fill the tank.

A 6 hours

B 8 hours

C 12 hours

D 14 hours

### Solution:

Let  $x$  is the rate of filling the tank with tap A and  $y$  is the rate of filling the tank with tap B.

Then  $4x+4y=1$  and  $x+4y=1/2$  . Solving this system of linear equations we get  $x=1/6$ ,  $y=1/12$ .

So, the time taken by tap B alone to fill the tank is 12 hours.

**Answer. C 12**