

## Assignment #18: Rate, Time, Amount of Work

Example: Bface can decorate 12 fish in 4 hours. Rface can decorate 15 fish in 10 hours. Working together, how long would they take to decorate 30 fish?

Solution: Here we use two facts. The rate you work times the time you work gives the amount of work done. Also, individual rates of work can be added to attain the total work rate.

	Rate in fish/hr	Time	Fish done
<b>Bface</b>	3	4	12
<b>Rface</b>	1.5	10	15
<b>Together</b>	4.5	x	30

The rather tiny equation is this:  $4.5x = 30$

### Problems

1. Anthony runs away at 25 mph. An hour later, Daniel takes a taxi at 30 mph to catch Anthony. In how much time will Daniel's taxi catch Anthony?
2. Floyd and Andrew start in the same place, then run directly away from one another, one at 32 mph and the other at 24 mph. In how many hours will they be 448 miles apart?
3. Quasimodo went 5 mph faster on the way to Wasava's house than he did returning home. He took 3 hours to get there and 3 1/2 hours to get back. How far away is Wasava's house?
4. Klem can paint the lawn alone in 2 hours, but if Reuben helps him, it takes only an hour and 15 minutes. How long would Reuben take to paint 3 such lawns alone?

5. Patrick can hammer 8 Kleenexes in 4 hours. Dave can hammer 5 Kleenexes in 10 hours. Working together, how long would they take to hammer 25 Kleenexes ?

(Optional):  $1011_2 + 1010_2 = XYZ_3$ . Find X, Y, and Z.      (Note:  $1011_2$  means 1011 in base 2.)