Honors Math 3 Name McG

5.8 – 5.9 Word Problems

1. Crane A can unload the container ship in 10 hours, and crane B can unload it in 14 hours. Crane A started to unload the ship at noon and was joined by crane B at 2 pm. At what time was the unloading job of the ship completed? 6:40 pm

$$\frac{t}{10} + \frac{t-2}{14} = 1$$

2. Pump A can unload the *Lunar Petro* in 30 hours and pump B can unload it in 24 hours. Because of an approaching storm, both pumps were used. How long did they take to empty the ship?

$13\frac{1}{3}$ hrs.

$$\frac{t}{30} + \frac{t}{24} = 1$$

3. The county's new asphalt paving machine can surface 1 km of highway in 10 hours. A much older machine can surface 1 km in 18 hours. How long will it take them to surface 21 km of highway if they start at opposite ends and work day and night? 135 hrs.

4. Pipes A and B can fill a storage tank in 8 hours and 12 hours, respectively. With the tank empty, pipe A was turned on at noon, and then pipe B was turned on at 1:30 pm. At what time was the tank full?

5:24 pm

$$\frac{t}{8} + \frac{t-1.5}{12} = 1$$

5. One pump can empty the town swimming pool in 7 hours less time than a smaller second pump can. Together they can empty the pool in 12 hours. How much time would it take the larger pump alone to empty it?

21 hours

$$\frac{12}{x+7} + \frac{12}{x} = 1$$

6. The intake pipe can fill a certain tank in 6 hours when the outlet pipe is closed, but with the outlet pipe open it takes 9 hours. How long would it take the outlet pipe to empty a full tank?

18 hours

$$\frac{9}{6} - \frac{9}{t} = 1$$