

DIRECTIONS: Solve.

1. $\frac{5}{16}$ of $\frac{4}{5}$ of a number is 15. Find the number.

60

2. 12 is $\frac{3}{5}$ of $\frac{10}{21}$ of a number. Find the number.

42

3. 30 is 20% of 30% of a number. Find the number.

500

4. 75% of 60% of a number is 36. Find the number.

80

5. Pump A can unload the petroleum from a ship in 30 hours and Pump B can unload it in 24 hours. Because of an approaching storm, both pumps were used on a certain ship. How long did they take (together) to empty the ship?

13 hours 20 minutes (or $13 \frac{1}{3}$ hours)

6. An old conveyor belt takes 21 hours to move one day's coal output from the mine to the rail line. A new belt can do it in 15 hours. How long does it take when both are used at the same time?

8 hours 45 minutes (or $8 \frac{3}{4}$ hours)

7. How much pure antifreeze must be added to 12 liters of a 40% solution of antifreeze to obtain a 60% solution of antifreeze?

6 liters

8. How much water must be evaporated from a 300-liter tank of a 2% salt solution to obtain a 5% solution?

180 liters

9. A pharmacist wishes to make 1.8 liters of a 10% solution of boric acid by mixing 7.5% and 12% solutions. How much of each type of solution should be used?

0.8 liters of 7.5% boric acid, 1 liter of 12% boric acid

10. How much of an 18% solution of sulfuric acid should be added to 360 mL of a 10% solution to obtain a 15% solution?

600 mL

11. 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 hours

12. 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 P.M. At what time will the tank be full?

5:24 P.M.