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1. It takes 6 gallons of chlorine solution to obtain a proper residual when the flow is 45,000 gpd. How many gallons will it take when the flow is 62,000 gpd?
 2. A motor is rated at 41 amps average draw per leg at 30Hp. What is the actual Hp when the draw is 36 amps? C.
 3. If it takes 2 operators 4.5 days to clean an aeration basin, how long will it take three operators to do the same job?
 4. It takes 3 hours to clean 400 feet of collection system using a sewer ball. How long will it take to clean 250 feet?
 5. It takes 14 cups of HTH to make a 12% solution, and each cup holds 300 grams. How many cups will it take to make a 5% solution?

Solution

1. The gallons chlorine and flow are directly related.

Thus,

$$\frac{6}{45,000} = \frac{X}{62,000} \implies X = \frac{6 * 62,000}{45,000} = 8.3 \text{ gallons}$$

2. The amp draw and Hp are directly related.

This

$$\frac{30}{41} = \frac{X}{36} \implies X = \frac{30 * 36}{41} = 26.3 \text{ Hp}$$

3. The number of operators and the days to clean are inversely related.

Thus,

$$2 * 4.5 = 3 * X \implies X = \frac{2 * 4.5}{3} = 3 \text{ days}$$

4. The hours to clean and the length of system cleaned are directly proportional.

Thus,

$$\frac{3}{400} = \frac{X}{250} \implies X = \frac{3 * 250}{400} = 1.9 \text{ hours}$$

5. The cups of HTH and percentage HTH solution are directly proportional.

Thus,

$$\frac{14}{12} = \frac{X}{5} \implies X = \frac{14 * 5}{12} = 5.8 \text{ cups}$$

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6. It takes 6 gallons of chlorine solution to obtain a proper residual when the flow is 45,000 gpd. How many gallons will it take when the flow is 62,000 gpd?

Solution:

Required gallons of chlorine is directly proportional to the flow being treated.

Thus, $\frac{6 \text{ gallons}}{45,000 \text{ gpd}} = \frac{X \text{ gallons}}{62,000 \text{ gpd}}$ Solving for X:

$$\Rightarrow X = \frac{6 * 62,000}{45,000} = \boxed{8.3 \text{ lbs bleach}}$$

7. A motor is rated at 41 amps average draw per leg at 30Hp. What is the actual Hp when the draw is 36 amps? C. Solution:

Ampere draw and horsepower (Hp) are directly proportional - when Hp goes up, the ampere draw goes up

Thus, $\frac{30 \text{ Hp}}{41 \text{ Amperes}} = \frac{X \text{ Hp}}{36 \text{ amperes}}$ Solving for X:

$$\Rightarrow X = \frac{6 * 62,000}{45,000} = \boxed{8.3 \text{ lbs bleach}}$$

8. If it takes 2 operators 4.5 days to clean an aeration basin, how long will it take three operators to do the same job? Solution:

Number of operators and the time required to accomplish a certain task are inversely proportional - when more operators are involved, the task will take less time.

(2 Operators * 4.5 days) = (3 Operators * X days) Solving for X:

$$\Rightarrow X = \frac{2 * 4.5}{3} = \boxed{3 \text{ days}}$$

9. It takes 6 gallons of chlorine solution to obtain a proper residual when the flow is 45,000 gpd. How many gallons will it take when the flow is 62,000 gpd?

Solution:

Required gallons of chlorine is directly proportional to the flow being treated.

Thus, $\frac{6 \text{ gallons}}{45,000 \text{ gpd}} = \frac{X \text{ gallons}}{62,000 \text{ gpd}}$ Solving for X:

$$\Rightarrow X = \frac{6 * 62,000}{45,000} = \boxed{8.3 \text{ lbs bleach}}$$

10. A motor is rated at 41 amps average draw per leg at 30Hp. What is the actual Hp when the draw is 36 amps? C. Solution:

Ampere draw and horsepower (Hp) are directly proportional - when Hp goes up, the ampere draw goes up

Thus, $\frac{30 \text{ Hp}}{41 \text{ Amperes}} = \frac{X \text{ Hp}}{36 \text{ amperes}}$ Solving for X:

$$\Rightarrow X = \frac{30 * 36}{41} = \boxed{26.3 \text{ Hp}}$$

11. If it takes 2 operators 4.5 days to clean an aeration basin, how long will it take three operators to do the same job? Solution:

Number of operators and the time required to accomplish a certain task are inversely proportional - when more operators are involved, the task will take less time.

(2 Operators * 4.5 days) = (3 Operators * X days) Solving for X:

$$\Rightarrow X = \frac{2 * 4.5}{3} = \boxed{3 \text{ days}}$$