

## Math Problems for Supervisors

1. On a Monday 0600-1400 shift, you are assigned as Field Officer 1 in Sanitation District 20 and have 10 trucks assigned to refuse collection. After checking all 10 refuse routes, you have determined that refuse collection routes M1, M4, and M7 will not be able to complete their routes.

The material left out for each route is as follows:

M1 –  $\frac{1}{8}$

M4 –  $\frac{1}{4}$

M7 –  $\frac{1}{2}$

How much material should you report as being “loads out” to the District Superintendent?

- a)  $1 \frac{1}{8}$
- b)  $\frac{5}{8}$
- c)  $\frac{7}{8}$
- d)  $\frac{3}{8}$

2. As a newly assigned Garage Supervisor, the Borough Operations Superintendent asks you to count the number of bags of “speedy dry” you currently have as inventory in your garage. You are only allowed to have up to 20% above your assigned inventory target number.

The Borough Operations Superintendent has informed you that your “speedy dry” inventory target number is 30 and your garage utility person informs you that your garage has a grand total of 35 bags of “speedy dry.”

Are you in compliance with the above inventory directive for “speedy dry?”

- a) Yes
- b) No

3. On a Saturday 0600-1400 shift, you are assigned as Field Officer 1 in Sanitation District 19 and have 12 trucks assigned to refuse collection. After checking all 12 refuse routes, you have determined that refuse collection routes S3, S5, S7, S10, and S11 will not be able to complete their routes.

The material left out for each route is as follows:

S3 –  $\frac{1}{2}$

S5 –  $\frac{1}{8}$

S7 –  $\frac{1}{4}$

S10 –  $\frac{1}{8}$

S11 –  $\frac{1}{4}$

How much material should you report as being “loads out” to the District Superintendent?

- a)  $1 \frac{1}{8}$
- b)  $1 \frac{1}{4}$
- c)  $1 \frac{1}{2}$
- d)  $1 \frac{3}{4}$

4. You are given a target Recycling Diversion rate of 30%. The Recycling Diversion rate is calculated by dividing your tons of recyclables by the total tons of refuse and recyclables combined.

Your recycling truck tonnage for this entire week is 25 tons and your total refuse tonnage is 50 tons.

Have you achieved the targeted Recycling Diversion rate for the week?

- a) Yes
- b) No

5. Today you are assigned as Field Officer 1 and that your area of responsibility had 4 missed collection complaints on the last day of collection. If you receive 1 missed collection complaint in your area of responsibility today, what is the percent increase or decrease in the number of missed collection complaints?

- a) 25 % increase
- b) 50 % decrease
- c) 75 % increase
- d) 75 % decrease

6. If you have a  $\frac{1}{4}$  load of paper "material out" in your area of responsibility and your average tons per truck of paper for that particular area of responsibility is approximately 8 tons.

If the above estimate of "material out" was correct, what is the paper tonnage that you could reasonably expect to see when the "clean up" truck assigned to collect this material is dumped.

- a) .25 tons
- b) 1.25 tons
- c) .75 tons
- d) 2.05 tons

7. If you have 60 Sanitation Workers assigned to your garage and 3 Sanitation Workers are out sick and 1 Sanitation Worker is out with a line of duty injury, approximately what percent of your Sanitation Workers are on Medical Leave?

- a) 3 %
- b) 5 %
- c) 7 %
- d) 9 %

8. If you are required to drive and inspect at least 75% of your routes that you were assigned to supervise each day, and you are assigned 12 routes today, how many routes must you inspect to be in compliance with the above directive?

- a) 6
- b) 7
- c) 8
- d) 9

9. As a newly assigned 1600-2400 garage supervisor, you are required to inspect the cab cleanliness of more than 80% of trucks that are assigned to your garage each night. How many trucks must you inspect if there are 30 trucks assigned to your garage in order to be in compliance with the above directive?

- a) 22
- b) 23
- c) 24
- d) 25

10. As a newly assigned garage supervisor, you would like to have an additional 8 Sanitation Workers receive Specialized Snow Training for the upcoming snow season.

If your district can only use surplus Sanitation Workers and not cancel any charts for Specialized Snow Training, the District Operations Clerk informs you that you can have up to 40% of your new training request before she would have to cancel Charts.

What is the maximum number of Sanitation Workers that you can schedule to receive Specialized Snow Training without cancelling any Charts?

- a) 1
- b) 2
- c) 3
- d) 4