EXAMPREP MATH STUDY QUESTIONS

1. 333 metres of total pipe length are needed for a job. How many 7m pipe lengths are required?

2. Convert water flowing from a reservoir at 18,500 L/h to m3/h.

3. A ferric chloride pump is calibrated to deliver 475 mL in 20 seconds. How much coagulant is being added in L/min?

4. In 2006, there were 3,927 residents in your municipality. In 2019 there were 15,305. How many more residents were there in 2019?

5. What is the difference in hardness when the source water is 350 mg/L and ion exchange discharge is 120 mg/L?

6. Convert 0.53 m3/s to L/min.

7. A water tank holds 15,500 litres and 3,503 litres are used on day one, 4,509 litres are used on day two, how much water remains in the tank?

8. When residents consume an average total of 1,080,000 L of water per day, how many litres are consumed in two weeks?

9. The maximum flow rate of a chemical feed pump is 275mL/min. How many mL would be pumped in 24 hours?

10. A wastewater treatment facility spends 53% of its budget on salaries. The budget is $1,270,000. How much is spent on salaries?

11. Wastewater flows through a pipe at a rate of 5,000L/min. When the flow is obstructed by 36%, what would the resulting flowrate be?

12. A reservoir overflow is 18m above the bottom and 6m of water is in the reservoir. To what percentage of its maximum capacity is the reservoir filled?

13. If a water meter is tested and found to read 23,503L, but the actual usage was 31,337L. What is the accuracy of the meter as a percentage?

14. A 1ML tank contains 100m3 of water, what percent of the tank volume is used?

15. What is the area of a storage shed 75m long, 37.5m wide, and 10m high?

16. Calculate the volume of a cylindrical tank 6m diameter, 12m high.

17. What is the circumference of a pipe that has a diameter of 30cm?

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18. The bottom part of a water storage tank is cone-shaped. If the cone diameter is 50m and its height is 3m. What's the tank volume?

19. What's the cross sectional area of a 30cm diameter pipe?

20. The maximum flowrate of a chemical feed pump is 275 mL/min. If the pump ran continuously at max for one day, how much chemical would be pumped?

21. A line has failed and 77.5m of 200mm pipe must be replaced. How many 1.5m pipe sections are needed?

22. The water level in an elevated tank is 10m above the ground. What's the resulting pressure at a ground level tap?

23. A flow meter reads 6,678.6m3 on Monday, and 7,399.6m3 on the following Monday. What is the average daily flow?

24. Over the course of four years, the hour meter on a pump had the following readings at the end of each year. How many hours did the pump run during the fourth year?

Year	1	2	3	4
Reading	976.3	1,325.8	2007.1	2371.4

25. How long will it take to fill an empty tank 6m wide, 12m long, and 9m deep with a pump discharging at 15L/s?

26. What is the volume of a 20cm pipe that is 600m long?

27. A reservoir has a width of 9m and a length of 24m. What is the area of the floor?

28. An Operator drove 69.9km on Monday, 18km on Tuesday, 71.7km on Wednesday, 0.0km on Thursday, and 36.8km on Friday. What is the average number of kilometres driven per day during a five-day week?

29. It takes 6 hours to fill a 30,000L tank. What is the pumping rate in L/s?

30. What is the detention time for a 450L tank that has an outflow of 0.5L/s?

31. How many litres of water are in a tank that is 12m long, 3.5m wide, and 1.5m high?

32. How many litres of wastewater are contained in a 300mm force main that is 600m long?

33. A tank is 588cm wide and 6.50m long. What is the floor area of the tank?

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34. At the beginning of a week, a flow totalizer reads 1,857L. Seven days later the flow totalizer reads 2,699L. What is the average daily flow?

35. The wastewater level in a tank is dropping at a rate of 0.3m/h from a tank 11.6m long, 7.5m wide, and 4.6m high. How many litres of wastewater flow from the tank hourly?

36. Calculate the total solids removal efficiency when the clarifier influent is 900mg/L and effluent is 663mg/L?

37. A clarifier has a flow of 4,200m3/d and a suspended solids concentration of 2,900mg/L. It has a diameter of 10m and is 2.5m deep. What is the solids loading rate in kg/d?

38. A water tank 2.4m long, 1.8m wide, has 1.2m of water in it. How high is the water column after adding 850L?

39. A tank has a length of 24m, a width of 12m, and a height of 7m. What is the area of the top of the tank?

40. A cylindrical tank 9m diameter, 14.5m at its deepest has a sloped bottom 2.5m high. What is the tank volume when half full?

41. What is the volume of a water tank 5m diameter with a height of 2.5m.

42. 3,105m3 passes through a flowmeter in three days. What is the flowrate in L/day?

43. At a flowrate of 2,700L/h, how long will it take to fill a tank with a diameter of 5m and a height of 3.9m?

44. How long will it take to load 4,800L, when the pumping rate is 320L/min?

45. What's the detention time for a lagoon that holds 2,500m3 of wastewater, and has a discharge rate of 10m3/d?

46. What volume of water is displaced when a ball with a diameter of 45cm is fully submerged in a tank?

47. What's the containment in litres for a rain barrel measuring 1.5m high, 0.75m diameter?

48. What is the chlorine demand when the chlorine residual concentration is 2mg/L and 8.7mg/L of total chlorine has been added?

49. How many kilograms of a chemical applied at a concentration of 50 mg/L are needed to treat 250,000L

50. How many kilograms of 75% available chlorine granules are needed to provide 1.5 kg of active chlorine?

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