

Algebra II Worksheet #5 Unit 3 page 1 _____

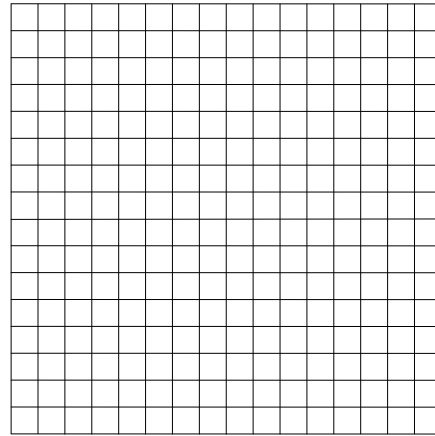
A rectangular water tank is 10 feet long, 3 feet wide, and 5 feet deep. The tank is empty initially and water is pumped into the tank at 7.5 cubic feet per minute until the tank is full.

Let t represent the time that water has been pumped into the tank (in **minutes**). Let $d(t)$ represent the **depth of the water** in the tank (in **inches**). Answer each of the following. Show your process neatly organized.

1. How long will it take to fill the tank? _____

2. Make a table giving t and $d(t)$ every 4 minutes from $t = 0$ until the tank is full.

3. Graph function d .



4. Write an equation giving $d(t)$ in terms of t . _____

5. What is the domain of function d ?

6. What is the range of function d ?

7. Evaluate $d(6)$. What does $d(6)$ represent in terms of the problem?

8. If $d(t) = 45$, then find the value of t . Describe what this value of t represents in terms of the problem.

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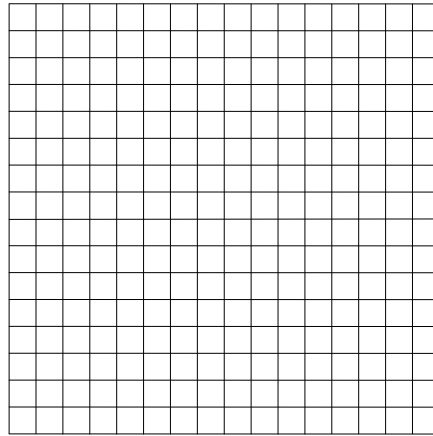
A rectangular water tank is 8 feet long, 6 feet wide, and 5 feet deep. The tank is full initially and water is drained out of the tank at 12 cubic feet per minute until the tank is empty.

Let t represent the time that water has been draining out of the tank (in **minutes**). Let $D(t)$ represent the **depth of the water** in the tank (in **inches**). Answer each of the following. Show your process neatly organized.

9. How long will it take to empty the tank? _____

10. Make a table giving t and $D(t)$ every 4 minutes from $t = 0$ until the tank is empty.

11. Graph function D .



12. Write an equation giving $D(t)$ in terms of t . _____

13. What is the domain of function D ?

14. What is the range of function D ?

15. Evaluate $D(6)$. What does $D(6)$ represent in terms of the problem?

16. If $D(t) = 45$, then find the value of t . Describe what this value of t represents in terms of the problem.

Algebra II Worksheet #5 Unit 3 page 3

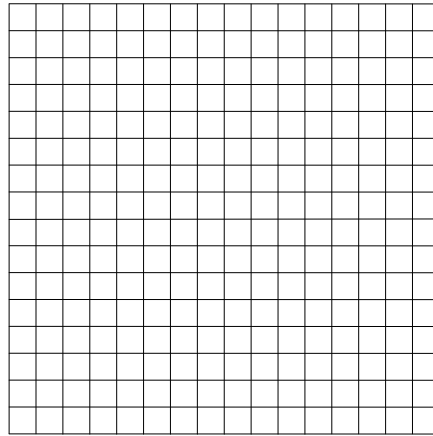
A rectangular water tank is 8 feet long, 5 feet wide, and 4 feet deep. The tank is **half full** initially and water is pumped into the tank at 5 cubic feet per minute until the tank is full.

Let t represent the time that water has been pumped into the tank (in **minutes**). Let $f(t)$ represent the **depth of the water** in the tank (in **inches**). Answer each of the following. Show your process neatly organized.

17. How long will it take to fill the tank? _____

18. Make a table giving t and $f(t)$ every 4 minutes from $t = 0$ until the tank is full.

19. Graph function f .



20. Write an equation giving $f(t)$ in terms of t . _____

21. What is the domain of function f ?

22. What is the range of function f ?

23. Evaluate $f(10)$. What does $f(10)$ represent in terms of the problem?

24. If $f(t) = 33$, then find the value of t . Describe what this value of t represents in terms of the problem.

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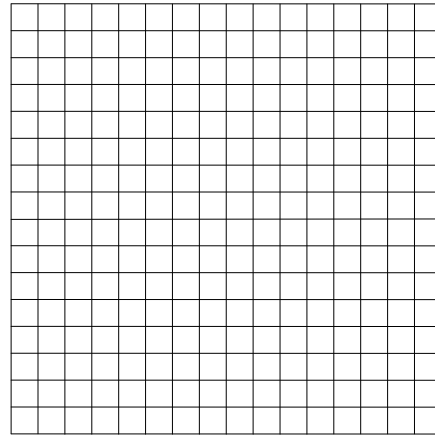
A rectangular water tank is 5 feet long, 3 feet wide, and 4 feet deep. The tank is **half full** initially and water is drained out of the tank at 2.5 cubic feet per minute until the tank is empty.

Let t represent the time that water has been draining out of the tank (in **minutes**). Let $F(t)$ represent the **depth of the water** in the tank (in **inches**). Answer each of the following. Show your process neatly organized.

25. How long will it take to empty the tank? _____

26. Make a table giving t and $F(t)$ every 3 minutes from $t = 0$ until the tank is empty.

27. Graph function F .



28. Write an equation giving $F(t)$ in terms of t . _____

29. What is the domain of function F ?

30. What is the range of function F ?

31. Evaluate $F(5)$. What does $F(5)$ represent in terms of the problem?

32. If $F(t) = 10$, then find the value of t . Describe what this value of t represents in terms of the problem.