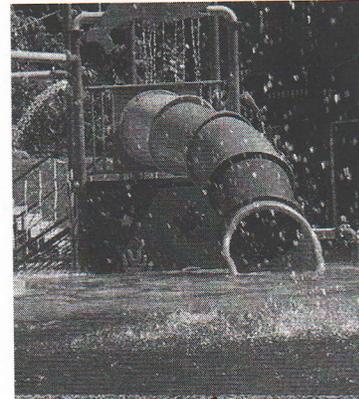


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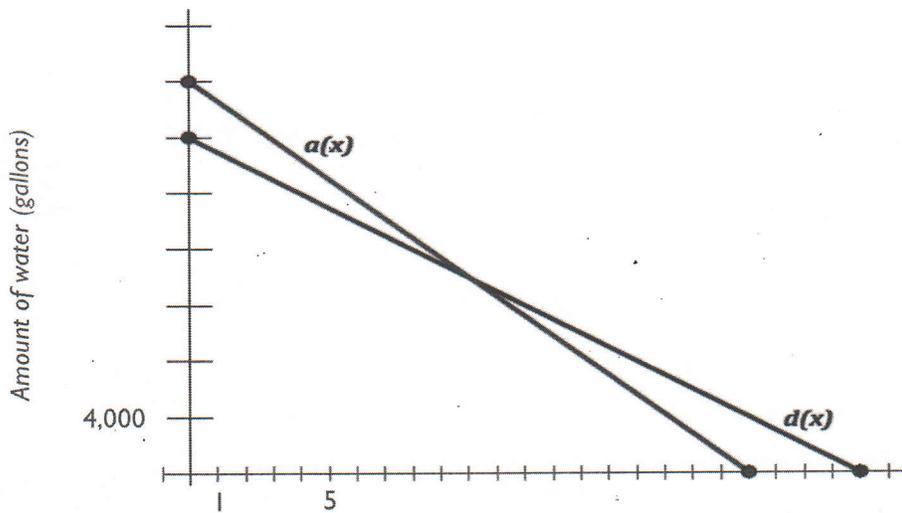
3.2/3.3 Pooling it Together
 CW #5 A Solidify Understanding Task



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Aly and Dayne work at a water park and have to drain the water at the end of each month for the ride they supervise. Each uses a pump to remove the water from the small pool at the bottom of their ride. The graph below represents the amount of water in Aly's pool, $a(x)$, and Dayne's pool, $d(x)$, over time. In this scenario, they decided to work together to drain their pools and created the equation:

$$g(x) = a(x) + d(x).$$



Answer the following questions about $g(x)$.

1. What does $g(x)$ represent?
2. Create the graph of $g(x)$ on a new set of axes using the graphs of $a(x)$ and $d(x)$. Identify $g(x)$ and label (scale, axes).

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3. Write the equation for the function $g(x)$ using the graph you created. Compare this equation to the algebraic representation of finding the sum of the equations for $a(x)$ and $d(x)$. (The equations were created in the last task, "The Water Park" task).

4. Should the algebraic equation of $g(x)$ be the same as the algebraic function created from the graph? Why or why not?

5. Use both the graphical as well as the algebraic representation to describe characteristics of $g(x)$ and explain what each characteristic means (each intercept, domain and range for this situation and for the equation, maxima and minima, whether or not $g(x)$ is a function, etc.)

6. Explain why adding the two values of the y-intercepts together in $a(x)$ and $d(x)$ can be used to find the y-intercept in $g(x)$.

7. Can a similar method be used to find the x-intercepts? Explain.