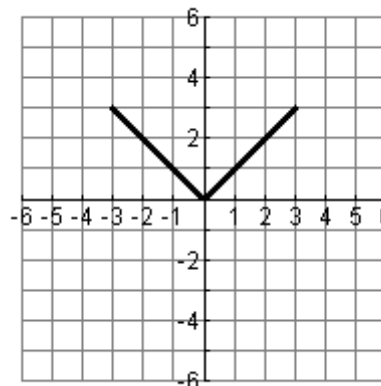
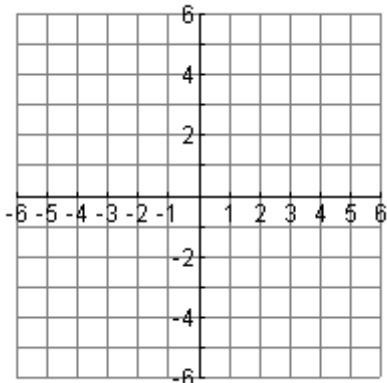


A Transformation Example

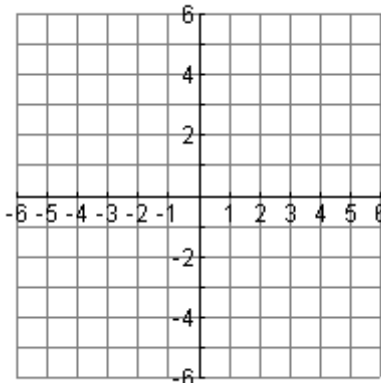
Given the graph to the right for the function $y = f(x)$, perform the transformations.



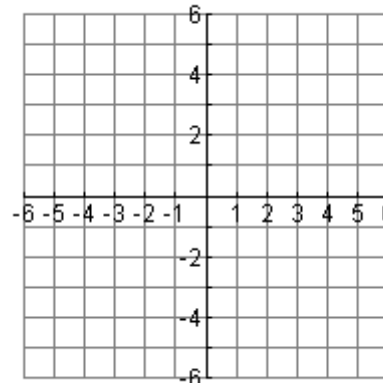
1. $f(x-2)$



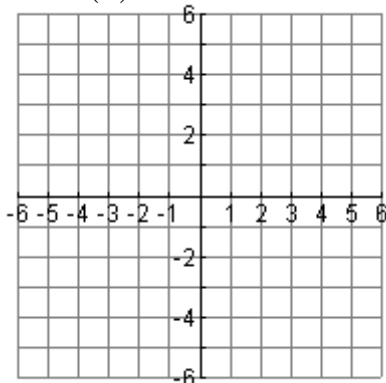
2. $f(x+1)$



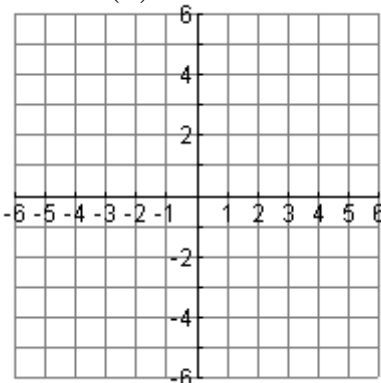
3. $f(x)-1$



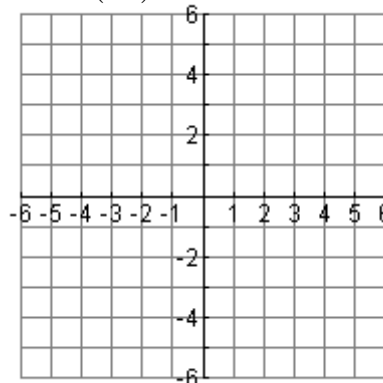
4. $f(x)+2$



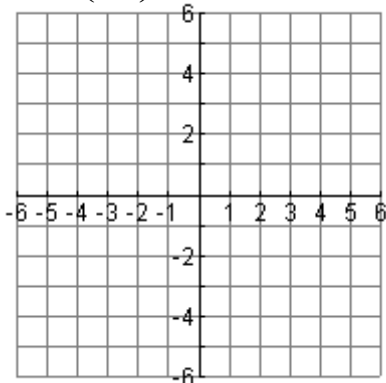
5. $-f(x)$



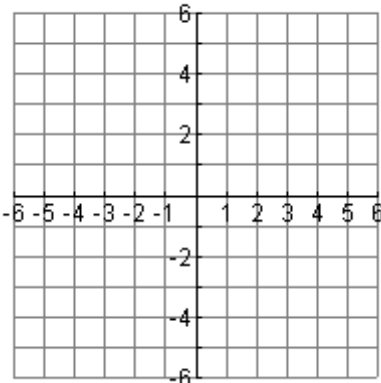
6. $f(2x)$



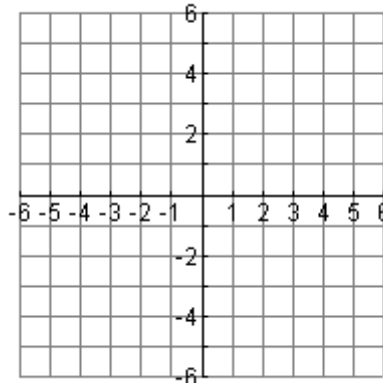
7. $f\left(\frac{1}{2}x\right)$



8. $2f(x)$

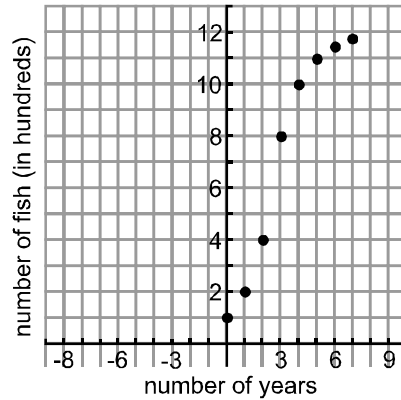


9. $\frac{1}{2}f(x)$



A Transformation Story

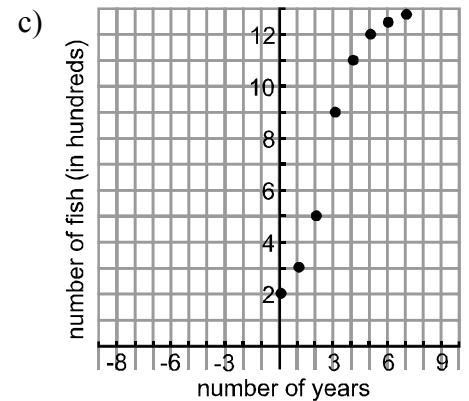
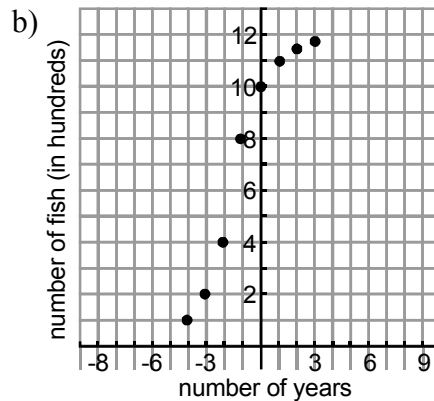
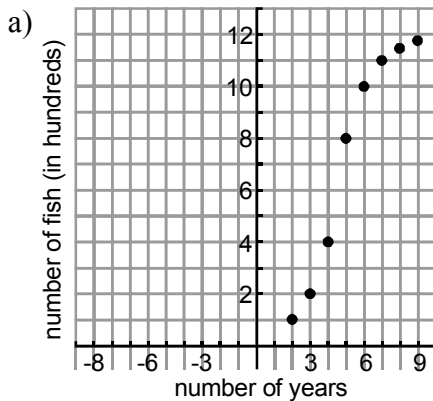
- Daniel has a lake in his backyard. He plans to raise fish in his lake. He released 100 fish in his lake in 1996. The graph below represents the number of fish in Daniel's lake in terms of the number of years since 1996.

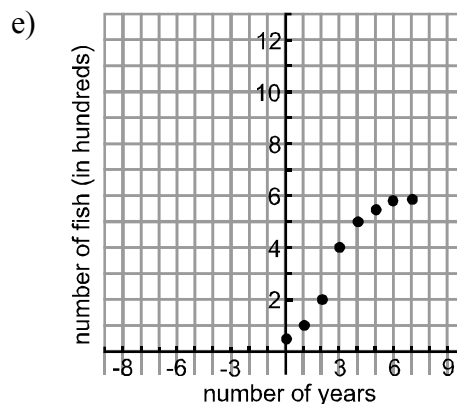
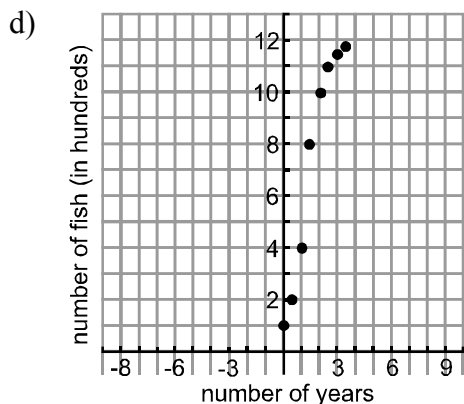


Let the function $f(t)$ represent the number of fish in Daniel's lake in terms of the number of years since 1996.

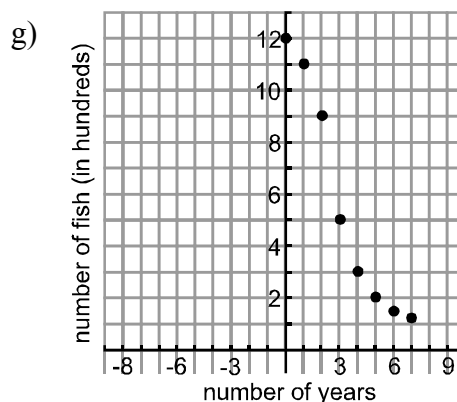
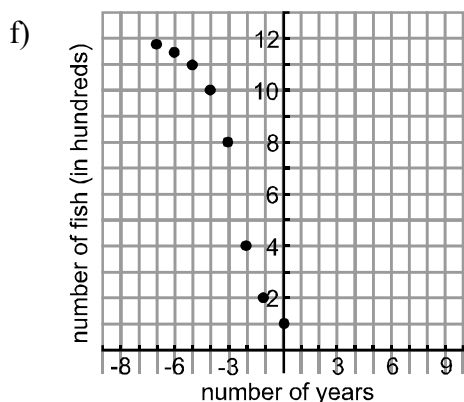
Transfer the graph of the function $y = f(t)$ to tracing paper.

Use this graph to help you explain the meaning of the transformations of the function in the context of this problem for problems a - e then use function notation to represent the transformation.





For problems f and g, use function notation to represent each transformation.



2. If $(2, 3)$ is a point on $f(x)$, what will the coordinates become on the following transformations?

- | | | |
|-------------------|---------------|---------------------------------|
| a) $2f(x)$ | b) $f(x) + 1$ | c) $-f(x)$ |
| d) $f(3x)$ | e) $f(-x)$ | f) $f(x - 1)$ |
| g) $f(x + 2)$ | h) $f(x) - 3$ | i) $f\left(\frac{1}{2}x\right)$ |
| j) $f(x + 2) - 1$ | | |

3. If $f(x)$ contains the point $A(-2, 5)$, what is a new function if A is transformed to the following point?

- | | | |
|--------------|-------------|--------------|
| a) $(-1, 5)$ | b) $(3, 6)$ | c) $(-4, 5)$ |
|--------------|-------------|--------------|

4. If $f(x)$ represents the amount of money Molly made and will make in hundreds of dollars from Wednesday of one week to Thursday of the next week, explain the meaning of $f(x-1)$ in terms of this situation.