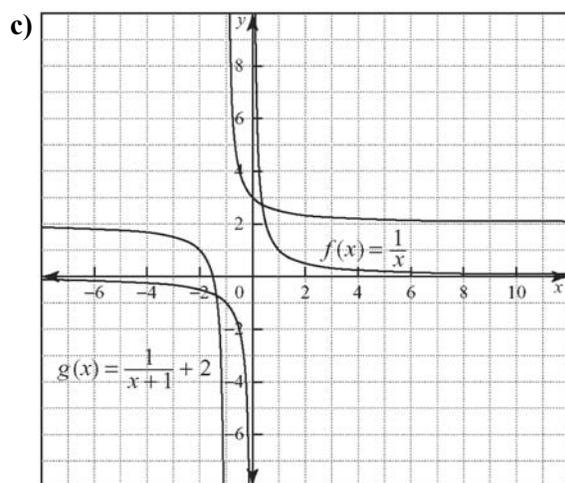
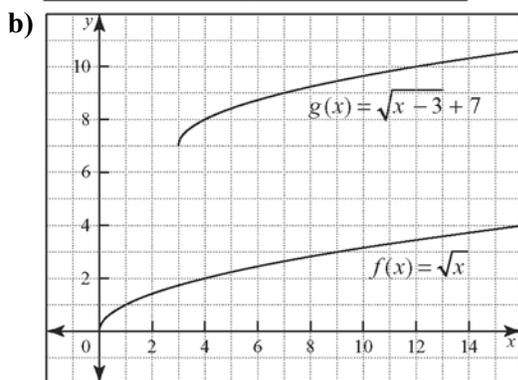
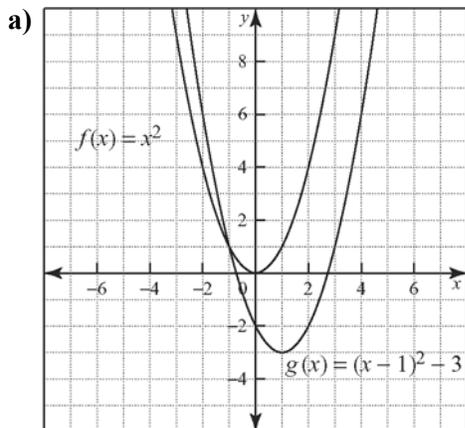
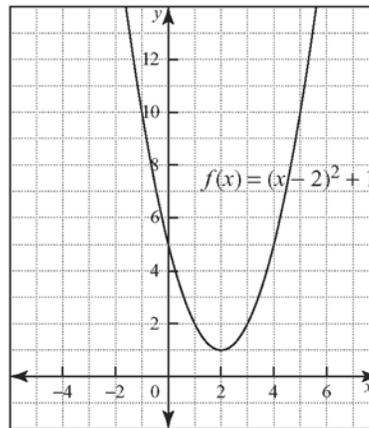


2.3 Horizontal and Vertical Translations of Functions**BLM 2-5**

1. Describe the transformation represented graphically in each.



2. Use the graph of $f(x)$ to determine the image points given below.



- a) $g(4) = f(4) - 4$
 b) $h(1) = f(2)$
 c) $k(-2) = f(-1) + 1$
 d) $m(0) = f(-2) - 5$

3. The function $g(x) = x^2$ is translated such that $h(x) = (x+4)^2 - 3$. Describe the translation that takes $g(x)$ to $h(x)$.

4. Using the base function $f(x) = \sqrt{x-1}$, write the equation for each transformed function.

- a) $a(x) = f(x-2)$
 b) $b(x) = f(x) + 5$
 c) $c(x) = f(x+1) - 1$
 d) $d(x) = f(x-3) + 2$

5. Repeat question 4 for the base function $f(x) = x^2 - 2$.

6. Repeat question 4 using the base function $f(x) = \frac{2}{x}$.

7. For the functions in question 6, determine any restrictions that exist for the variable x .

