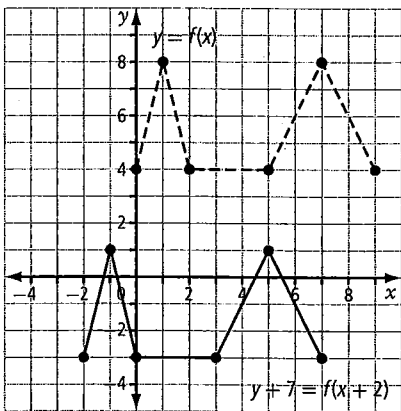


Answers

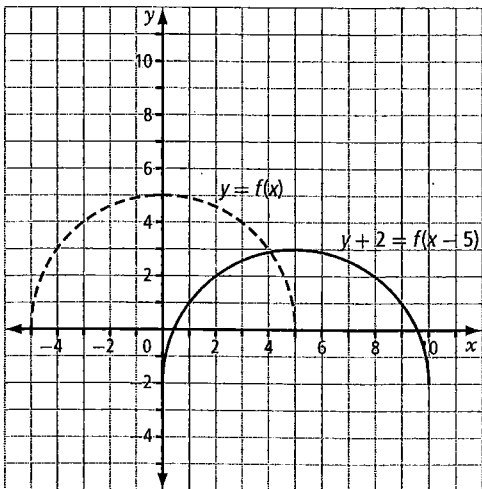
Chapter 1

1.1 Horizontal and Vertical Translations, pages 1-8

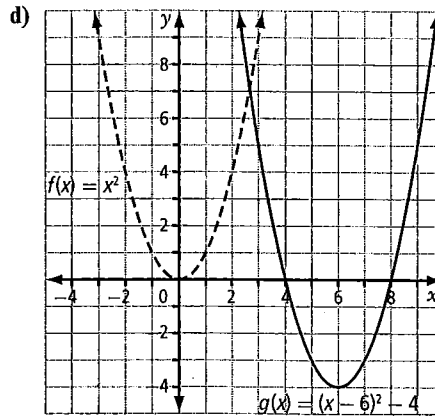
- $h = 10, k = 0$ **b)** $h = -2, k = 3$
 - $h = 17, k = 13$ **d)** $h = -1, k = -7$
 - $h = 0, k = 4$
- $y + 5 = (x - 2)^2$ **b)** $y + 5 = |x - 2|$
 - $y + 5 = \frac{1}{x - 2}, x \neq 2$
- $(x, y) \rightarrow (x + 25, y)$; horizontal translation 25 units to the right
 - $(x, y) \rightarrow (x, y - 50)$; vertical translation 50 units down
 - $(x, y) \rightarrow (x - 20, y + 10)$; horizontal translation 20 units to the left and vertical translation 10 units up
- $(x, y) \rightarrow (x - 2, y - 7)$



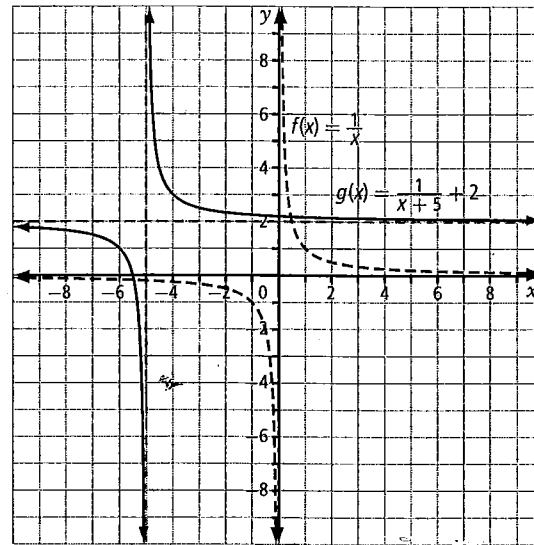
- $(x, y) \rightarrow (x + 5, y - 2)$



- $h = 6, k = -4$ **b)** $(x, y) \rightarrow (x + 6, y - 4)$
 - $y = (x - 6)^2 - 4$



- $(0, 0), (6, -4)$; vertex has coordinates (h, k)
 - domain of each function: $\{x \mid x \in \mathbb{R}\}$;
range of $f(x)$: $\{y \mid y \geq 0, y \in \mathbb{R}\}$, range of $g(x)$: $\{y \mid y \geq -4, y \in \mathbb{R}\}$; in general, the range is $\{y \mid y \geq k, y \in \mathbb{R}\}$
- $h = -5, k = 2$ **b)** $(x, y) \rightarrow (x - 5, y + 2)$
 - $y = \frac{1}{x + 5} + 2$



- For $f(x)$: domain $\{x \mid x \neq 0, x \in \mathbb{R}\}$, range $\{y \mid y \neq 0, y \in \mathbb{R}\}$, asymptotes $y = 0, x = 0$;
For $g(x)$: domain $\{x \mid x \neq -5, x \in \mathbb{R}\}$, range $\{y \mid y \neq 2, y \in \mathbb{R}\}$, asymptotes $y = 2, x = -5$;
restriction on the domain of $g(x)$ is $x \neq h$,
restriction on the range of $g(x)$ is $y \neq k$,
asymptotes are at $x = h$ and $y = k$