## 2-1 Additional Practice

## Vertex Form of a Quadratic Function

Graph each function. Describe how it was translated from $f(x)=x^{2}$.

1. $f(x)=x^{2}+4$
2. $f(x)=(x-3)^{2}$
3. $f(x)=(x+2)^{2}-1$

Identify the vertex, axis of symmetry, the maximum or minimum value, and the domain and the range of each function.
4. $y=(x-2)^{2}+3$
5. $f(x)=-0.2(x+3)^{2}+2$
6. $y=(x+4)^{2}-1$

Write the equation of each parabola in vertex form.
7. vertex $(3,-2)$, point $(2,3)$
8. vertex ( $-4,-24$ ),
point $(-5,-25)$
9. vertex (-12.5, 35.5), point $(1,400)$
10. Given the function $f(x)=x^{2}$, Write the equation function $g(x)$ whose graph is a translation 5 units left and 3 units down.
11. The diagram shows the path of a model rocket launched from the ground. It reaches a maximum altitude of 384 ft when it is above a location 16 ft from the launch site. What quadratic function models the height of the rocket?


