Graph and describe the transformation from its parent function

1. $g(x)=-1 / 2 x+3$
2. $h(x)=-2(x-1)^{2}+6$
3. $h(x)=1 / 2|x+4|-1$

Write a new function $g(x)$ that represents the indicated transformations of the graph of $f(x)$
4. $f(x)=x^{2}$ Vertical shrink of factor $1 / 3$ followed by reflection in the $x$-axis
5. $f(x)=2|x|+3$ translate right 2 units then up 5

Use completing the square to write the equation in vertex form.
Give the vertex. State whether this is a maximum or minimum and give its value.
6. $y=x^{2}-12 x+5$

Vertex form:
Vertex:
Max or min?:
7. $y=2 x^{2}+6 x+8$

Vertex form:
Vertex:
Max or min?:

Write a quadratic equation with the following characteristics.
8. Contains ( $-7,-15$ ) and has vertex ( $-5,9$ )
9. x-intercepts 5 and -1 passes through $(4,3)$

You toss a ball into the air. The path of the ball can be modeled by $h(t)=-2 t^{2}+14 t+2$ where $t$ is seconds and $h(t)$ is the height.
10. What is the ball's maximum height?
(give answer to two decimal places if necessary)
11. You catch it after 7 seconds. How high was the ball when you caught it? $\qquad$

