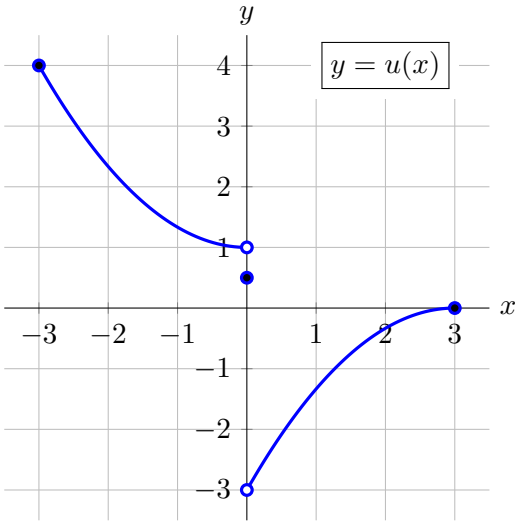
7. [8 points] For each part below, carefully draw the graph of a single function on the given axes that satisfies the given conditions.

a. [4 points]

A function $u(x)$, defined for all $-3 \leq x \leq 3$, that satisfies <u>all</u> of the following:

- $u(x)$ is invertible;
- $u(x)$ is decreasing and concave up on $(-3, 0)$;
- $u(x)$ is increasing and concave down on $(0, 3)$;
- $u(x)$ is *not* continuous at $x = 0$, but *is* continuous on the intervals $(-3, 0)$ and $(0, 3)$.



b. [4 points]

A function $v(x)$, defined for all $-3 \leq x \leq 3$, that satisfies <u>all</u> of the following:

- $v(x)$ is an even function;
- $v'(2) = -1$
- $\lim_{x \to 3^-} v(x)$ exists but does not equal $v(3)$.
- $\lim_{h \to 0^+} \dfrac{v(0+h) - v(0)}{h} = 1$