Inline definition: $f : A \to A, \quad a \mapsto f(a)$ like this.

Display definition:
$$f : A \to A$$
$$a \mapsto f(a)$$

like this.

Inline definition: $f : A \to A, \quad a \mapsto f(a), \quad f(a) := a^a$ like this.

Display definition:
$$f : A \to A$$
$$a \mapsto f(a)$$
$$f(a) := a^a$$

like this.