Q3a: If $y(t) = x(t-\tau)$. Then we see that $y'(t) = x'(t-\tau) = f(x(t-\tau)) = f(y)$. This will be defined on the open interval of $(a+\tau, b+\tau)$

Q3b: If $z = x(-t)$, we see that $z'(t) = -x'(-t) = -f(x(-t)) = -f(z)$. This will be defined on $(-b, -a)$

Q3c: Consider the ode $x' = \sigma f(x)$. We see that $w'(t) = \sigma x'(\sigma t) = \sigma f(w)$. This will be defined on $(\frac{a}{\sigma}, \frac{b}{\sigma})$.