Sets		
Set	Convex?	Proof
$C = A \cup B$	Not always	
$C = A \cap B$	Yes, if A and B are convex sets.	

Functions		
Function	Convex?	Proof
$\mathbf{y} = \max(f_1, f_2)$	Yes, if f_1 and f_2 are convex functions	
$\mathbf{y} = \min(f_1, f_2)$	Not always	
$y = \mathbf{c}^\intercal \mathbf{x}$ (linear function)	Yes (but not strictly convex)	
$y = \|\mathbf{x}\|_p$ (p-norm)	Yes (for any $p \in \mathbb{N}_+$)	$\|\theta\mathbf{x} + (1-\theta)\mathbf{y}\| \leq \theta \|\mathbf{x}\| + (1-\theta)\|\mathbf{y}\|$ (triangular inequality)
$f(g(\mathbf{x}))$	Yes, if f, g are convex	