Recall that we setup the problem of learning a linear separator $y = \text{sign}(\langle w, x \rangle)$ for binary classification as follows (SVM):

$$w^* = \arg \min_w \frac{1}{n} \sum_{i=1}^{n} \ell(y^{(i)} \langle w, x^{(i)} \rangle) + \frac{\lambda}{2} \|w\|^2,$$

where $\ell$ could be any of the following:

(A) $\phi(t) = (1 - t)_+$
(B) $\phi(t) = \log(1 + \exp(-t))$
(C) $\phi(t) = \exp(-t)$
(D) $\phi(t) = 1 - \tanh(t)$

Which of these do not give a convex optimization problem? Answer by listing the letters corresponding to those choices.