$$f_X(x;\theta) = \begin{cases} \frac{1}{\theta_2-\theta_1} & \text{if } x \in (\theta_1,\theta_2) \\ 0 & \text{o/w} \end{cases}$$

$$E(X) = \int_{\theta_1}^{\theta_2} \frac{x}{\theta_2-\theta_1}\, dx$$

$$= \frac{1}{(\theta_2-\theta_1)} \frac{1}{2}\left[x_2\right]_{\theta_1}^{\theta_2}$$

$$= \frac{1}{2}\frac{1}{(\theta_2-\theta_1)}\left\{\theta_2^2-\theta_1^2\right\}$$

$$= \tfrac{1}{2}(\theta_1+\theta_2)$$