P4:

(a) For a p.m.f

$$p(x) = \begin{cases} \frac{1}{8} & , \quad x = -1 \\ \frac{6}{8} & , \quad x = 0 \\ \frac{1}{8} & , \quad x = 1 \end{cases}$$

Find $P(|X - \mu| \geq 2\sigma)$.

(b) Compare this result with that obtained by using Chebychev's inequality.