

1. Let  $X$  be a discrete random variable with the following PF:

$$f_x(x) = \begin{cases} \frac{x^2}{10} & \text{for } x = -2, -1, 0, 1, 2 \\ 0 & \text{otherwise.} \end{cases}$$

(a) Find the least median of  $X$ .

(b) Find the mode(s) of  $X$ .

(c) Find the first moment of  $X$ .

(d) Find the 3rd central moment of  $X$ .

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2. Let  $X$  be a continuous random variable with following PF:

$$f_x(x) = \begin{cases} \frac{3}{4}(2x - x^2) & 0 < x < 1 \\ 0 & \text{otherwise} \end{cases}$$

(a) Find  $E(X)$ .

(b) Find the third moment of  $X$ .

(c) Find the mode(s) of  $X$ .