

2) (1.5 points) Let X be a random variable with pdf
$$\begin{pmatrix} -2 & -1 & 0 & 2 \\ \frac{1}{8} & \frac{1}{4} & \frac{1}{2} & \frac{1}{8} \end{pmatrix}$$
. Find the pdf of Y = 2X².

$$=) pll pl (3) = 1$$

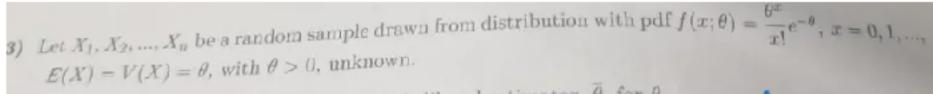
$$= (3) pl (3) + (3)$$

$$P(Y-4) = P(X=-2)V(X--1) = \frac{1}{4}$$

$$P(Y-2) = P(X--1) = \frac{1}{4}$$

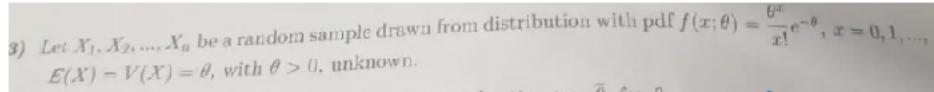
$$P(Y-3) = P(X-0) = \frac{1}{4}$$

$$Y(\frac{1}{2}, \frac{1}{4}, \frac{1}{4})$$



- a) (1.5 points) Find the maximum likelihood estimator, $\bar{\theta}$, for θ .
- b) (0.5 points) Is it an absolutely correct estimator? Explain.
- c) (2 points) Find the efficiency of $\overline{\theta}$, $e(\overline{\theta})$.

m + mx = 0 (=) D = n (=) D = n (=) D = x (=) D



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b)
$$\tilde{\theta} = \tilde{y}$$

i) $E(\tilde{\theta}) = 0$
 $V(\tilde{\theta}) = V(0) = 0$

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 $V(\tilde{\theta}) = 0$
 $V(\tilde$