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$x$	$\hat{f}$	$p(x, \hat{f})$	$\hat{g}$	$p(x, \hat{g})$
0	0	0.4	0	1/4
0	1	0.2	1	1/4
1	0	0.1	0	1/4
1	1	0.3	1	1/4

Mean of a function = Expected value of the function at  
at an input the input

$$\therefore E[\hat{f}(x=1)|(x=1)] = 3/4 \text{ (As previously calculated)}$$

Similarly,

$$E[\hat{g}(x=1)|(x=1)] = (0) \times \left( \frac{(1/4)}{(1/4 + 1/4)} \right) + (1) \times \left( \frac{(1/4)}{(1/4 + 1/4)} \right)$$

$$= \frac{1}{2}$$

So,

$$\hat{f}_{\text{mean}} = 3/4$$

$$\hat{g}_{\text{mean}} = 1/2$$

$$\text{MSE}_{\hat{f} \text{ at } x=1} = \sum_{i=0}^1 (\hat{f}_i - \hat{f}_{\text{mean}})^2$$

$$= (0 - 3/4)^2 + (1 - 3/4)^2$$

$$= \frac{9}{16} + \frac{1}{16} = \frac{10}{16} = \frac{5}{8} = 0.625$$