ENGG2780A Quiz 3 1155144002 PRINCIPE Jericho Bibat

The possible values of the sample ~~mean~~ range are 0, 1, 2.

Sample range is 0 when the three samples are the same, so $P(X_1 = X_2 = X_3) = \frac{3}{27} = \frac{1}{9}$

Sample range is 1 when the diff. of max and min are 1, i.e. 112·3, 221·3, etc., so

$P(\text{range is } 1) = \frac{12}{27} = \frac{4}{9}$

Sample range is 2 in the rest of the cases, so $P(\text{range is } 2) = 1 - (P(\text{range is } 0) + P(\text{range is } 1)) = \frac{4}{9}$

$\therefore$

x	0	1	2
$P(\text{range is } x)$	$\frac{1}{9}$	$\frac{4}{9}$	$\frac{4}{9}$