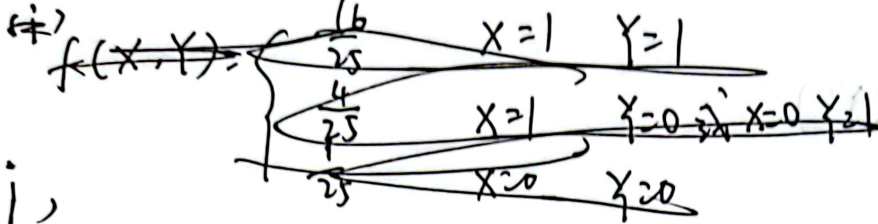


计算 2114 20211331104 111111

5-4

2.



(i)

$P(X=0, Y=0) = \frac{1}{5} \times \frac{1}{5} = \frac{1}{25}$   
 $P(X=1, Y=0) = \frac{4}{5} \times \frac{1}{5} = \frac{4}{25}$   
 $P(X=0, Y=1) = \frac{1}{5} \times \frac{4}{5} = \frac{4}{25}$   
 $P(X=1, Y=1) = \frac{4}{5} \times \frac{4}{5} = \frac{16}{25}$

X	Y	
0	0	$\frac{1}{25}$
0	1	$\frac{4}{25}$
1	0	$\frac{4}{25}$
1	1	$\frac{16}{25}$

X边缘分布律

Y边缘分布律

X	0	1
概率	$\frac{5}{25}$	$\frac{20}{25}$

Y	0	1
概率	$\frac{5}{25}$	$\frac{20}{25}$

(ii)

$P(X=0, Y=0) = \frac{1}{5} \times \frac{1}{9} = \frac{1}{45}$   
 $P(X=1, Y=0) = \frac{4}{5} \times \frac{1}{9} = \frac{4}{45}$   
 $P(X=0, Y=1) = \frac{1}{5} \times \frac{2}{9} = \frac{2}{45}$   
 $P(X=1, Y=1) = \frac{4}{5} \times \frac{2}{9} = \frac{8}{45}$

X	Y	
0	0	$\frac{1}{45}$
0	1	$\frac{2}{45}$
1	0	$\frac{4}{45}$
1	1	$\frac{8}{45}$

X	0	1
概率	$\frac{9}{45}$	$\frac{36}{45}$

Y	0	1
概率	$\frac{9}{45}$	$\frac{36}{45}$

5-5

∵ X, Y 相互独立

$$P(X_i, Y_j) = P(X_i) \times P(Y_j)$$

$$P_{-2, -1} = P_{-2} \times P_{-1} = \frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$$

同理可得

X	Y			
	-2	-1	0	1
-2	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
-1	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
0	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
1	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

Y	X			
	-2	-1	0	1
-2	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
-1	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
0	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
1	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

Y	X			
	-2	-1	0	1
-2	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
-1	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
0	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
1	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$