práctica 6

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1.

a.

$$P(X \leq 2, Y = 1) = P(X = 0, Y = 1) + P(X = 1, Y = 1) + P(X = 2, Y = 1)$$
$$= \frac{0+1}{30} + \frac{1+1}{30} + \frac{2+1}{30}$$
$$= \frac{1}{5}$$

b.

$p_x(0) = \sum_{y=0}^{2} p(0, y) = \frac{1}{10}$
$p_x(1) = \sum_{y=0}^{2} p(1, y) = \frac{1}{5}$
$p_x(2) = \sum_{y=0}^{2} p(2, y) = \frac{3}{10}$
$p_x(3) = \sum_{y=0}^{2} p(3, y) = \frac{2}{5}$

$p_y(0) = \sum_{x=0}^{3} p(x, 0) = \frac{1}{5}$
$p_y(1) = \sum_{x=0}^{3} p(x, 1) = \frac{1}{3}$
$p_y(2) = \sum_{x=0}^{3} p(x, 2) = \frac{7}{15}$

c.

$p(0, 0) = 0$
$p_x(0) * p_y(0) = \frac{1}{10} * \frac{1}{5} = \frac{1}{50}$
no son independientes

d.

$$p_{xy} = \frac{E\{[X - E(X)][Y - E(Y)]\}}{\sqrt{V(X)V(Y)}}$$