

$$F(x, y, z) = axyz + 2xy + 2byz + cx - (1-b)y - bz$$

$$a = b = c = \frac{1}{2}$$

$$x \in [0, 1]$$

$$y \in [0, 1]$$

$$z \in [0, 1]$$

$$F'_x = ayz + 2y + c = \frac{1}{2}[0, 1][0, 1] + 2[0, 1] + \frac{1}{2} =$$

$$= \left[\frac{1}{2}, 3\right] > 0 \Rightarrow [0, 1] \rightarrow 0$$

$$F'_y = axz + 2x + 2bz - 1 + b = \frac{1}{2} \cdot 0 \cdot [0, 1] + 2 \cdot 0 + 2 \cdot \frac{1}{2} [0, 1]$$

$$- 1 + \frac{1}{2} = \left[-\frac{1}{2}, \frac{1}{2}\right]$$

$$F'_z = axy + 2by - b = \frac{1}{2} \cdot 0 \cdot [0, 1] + 2 \cdot \frac{1}{2} [0, 1] - \frac{1}{2} = \left[-\frac{1}{2}, \frac{1}{2}\right]$$

$$F(0, [0, 1], [0, 1]) = \frac{1}{2} \cdot 0 \cdot [0, 1] \cdot [0, 1] + 2 \cdot 0 \cdot [0, 1] +$$

$$+ 2 \cdot \frac{1}{2} [0, 1] [0, 1] + \frac{1}{2} \cdot 0 - (1 - \frac{1}{2}) [0, 1] - \frac{1}{2} [0, 1] =$$

$$= [-1, 1]$$

$$F([0, 1], [0, 1], [0, 1]) = \frac{1}{2} [0, 1] [0, 1] [0, 1] + 2 [0, 1] [0, 1] +$$

$$+ 2 \cdot \frac{1}{2} [0, 1] [0, 1] + \frac{1}{2} [0, 1] - (1 - \frac{1}{2}) [0, 1] - \frac{1}{2} [0, 1] = [-1, 4]$$

$$[-1, 4] \rightarrow [-1, 1]$$