$[0.1, 0.3, 0.7]$

$[0.2, 0.4, 0.6]$

$$\frac{x \cdot y}{|x|\,|y|} = \frac{0.02 + 0.12 + 0.42}{\sqrt{0.01+0.09+0.49} \cdot \sqrt{0.04+0.16+0.36}}$$

$$= \frac{0.56\sqrt{0.56}}{\sqrt{0.59} \cdot \sqrt{0.56}}$$

$$= \sqrt{\frac{56}{59}} = 0.9742\ldots$$

$$\frac{0.02}{0.05 \times 0.1} = \frac{1}{0.25} = 4$$

$$\log_2 4 = 2$$

$$\therefore \quad PMI = 2$$

$$\log_2 \square = 1.39$$

$$2^{1.39} = 2.62$$

$$4 \text{ times } \times \log_{10}\left(\frac{1000}{100}\right) =$$

$$\log_{10}(4+1) =$$

$$\log_{10}5 \times 1 = 0.6989\ldots \fallingdotseq 0.7$$

$$\log_2\left(\frac{P(d,s)}{P(d)\,P(s)}\right) = \log_2 \frac{\frac{20}{1000}}{\frac{30}{1000} \times \frac{50}{1000}}$$

$$= \frac{20000}{1500}$$

$$= \frac{200}{15} = \frac{40}{3} + 1$$