$$0 \leq BP \leq \frac{WIDTH}{2}$$

$$BP = |cx - px|$$

↙ CENTER X OF THE BALL

↘ CENTER X OF THE PADDLE

⇓

$$0 \leq \boxed{\frac{BP}{WIDTH}} \leq \frac{1}{2}$$

$$0 \leq \boxed{RATE0} \leq \frac{1}{2}$$

⇓

$$0 \leq RATE0\pi \leq \frac{\pi}{2}$$

⇓

$$0 \leq \frac{RATE0}{2}\pi \leq \frac{\pi}{4}$$

⇓

$$\cos(0) \leq \cos\left(\frac{RATE0\pi}{2}\right) \leq \cos\left(\frac{\pi}{4}\right)$$

⇓

$$\boxed{1 \leq ANGLE \leq \frac{1}{2}}$$

$$\underline{\underline{DY = DY * (-ANGLE)}}$$