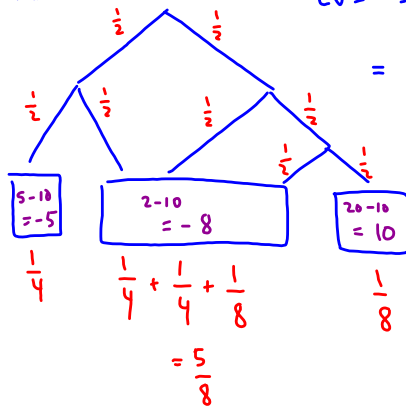


CASINO

Maze:



$$EV = -\$5\left(\frac{1}{4}\right) + (-\$8)\left(\frac{5}{8}\right) + \$10\left(\frac{1}{8}\right)$$

$$= -\$5$$

← unfair

WHEEL:

$$EV = (50-20)\frac{1}{4} + (5-20)\frac{2}{4} + (10-20)\frac{1}{4}$$

$$= \$30\left(\frac{1}{4}\right) + (-\$15)\left(\frac{1}{2}\right) + (-\$10)\left(\frac{1}{4}\right)$$

$$= \$7.5 - 7.5 - 2.5$$

$$= -\$2.50$$

← unfair

HEADS OR TAILS:

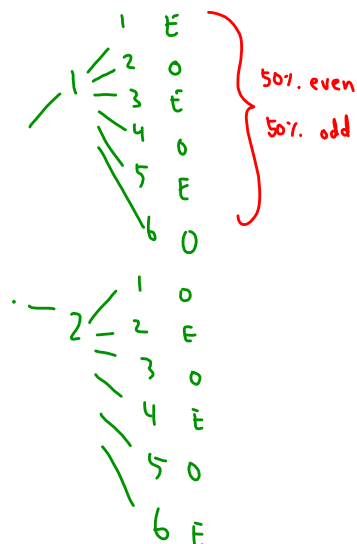
$$EV = (20-15)(0.5) + (5-15)(0.5)$$

$$= \$5(0.5) - \$10(0.5)$$

$$= -\$2.50$$

← unfair

DICE:



$$EV = (20-15)(0.5) + (10-15)(0.5)$$

$$= 0$$

← fair

MARBLES

$$\begin{aligned}EV &= 10\left(\frac{2}{16}\right) + 2\left(\frac{6}{16}\right) - 5\left(\frac{8}{16}\right) \\ &= -0.50\end{aligned}$$

WHEEL

$$EV = (30-10)\left(\frac{36}{360}\right) + (0-10)\left(\frac{252}{360}\right) + (x-10)\left(\frac{72}{360}\right)$$

$$0 = 20\left(\frac{1}{10}\right) - 10\left(\frac{7}{10}\right) + (x-10)(0.2)$$

$$0 = 2 - 7 + 0.2x - 2$$

$$7 = 0.2x$$

$$35 = x$$