

Case 2: Eve gets incorrect bits

Bob uses the same base as Eve (definitely wrong)

$$\frac{3}{4} \times \frac{3}{4} + \frac{1}{4} \times \left(\frac{1}{2} \times 0 + \frac{1}{2} \times \frac{1}{2} \right) = \frac{10}{16} = 62.5\%$$

Case 1: Eve gets correct bits and Bob too

Bob uses different base as Eve