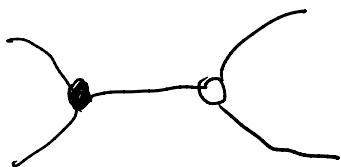
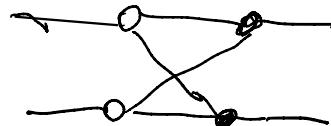




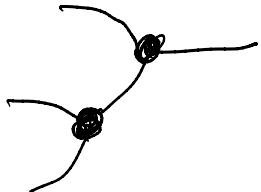
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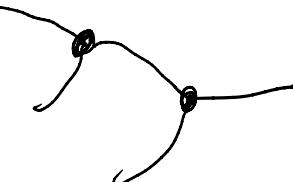
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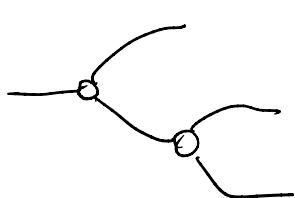
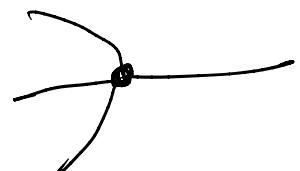
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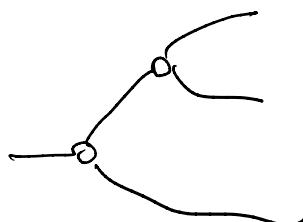
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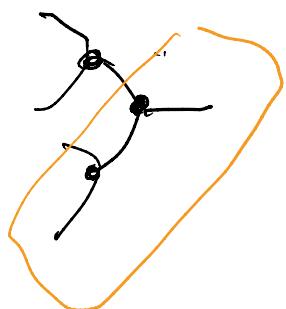
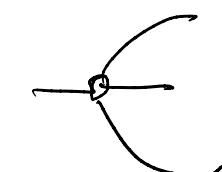
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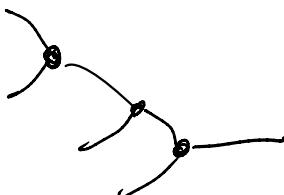
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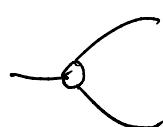
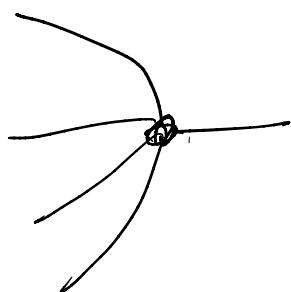
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=



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like 'copy'

$$|+\rangle\langle++| + |- \rangle\langle--|$$

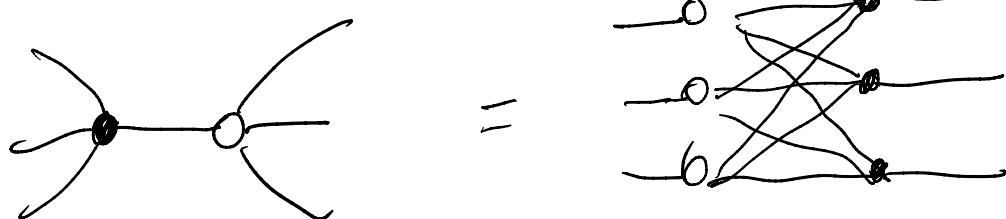
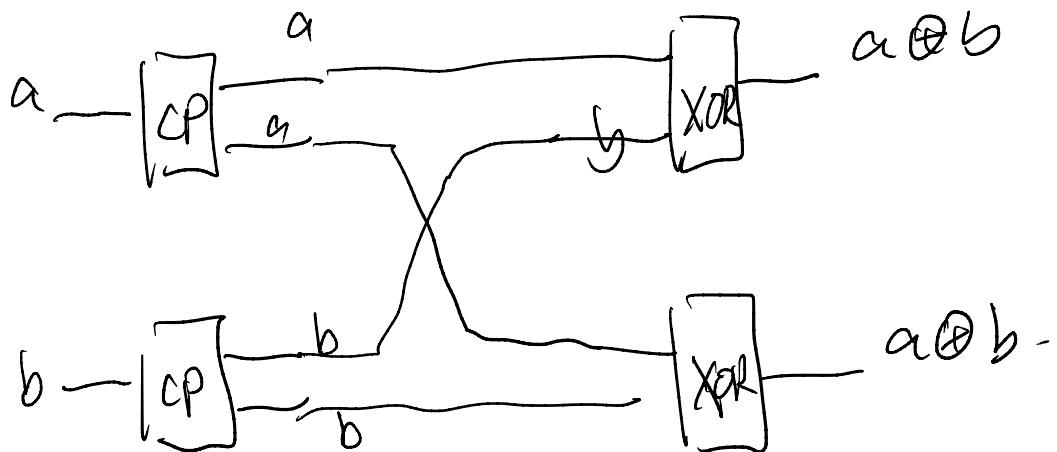
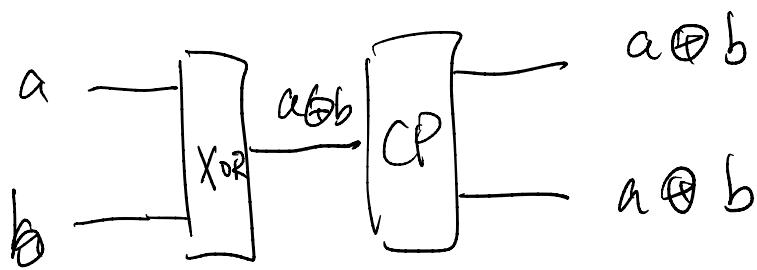
$$|00\rangle\langle 01| + |11\rangle\langle 10|$$

likes 'Xor'.

$$(|+\rangle\langle++| + |- \rangle\langle--|) |01\rangle = |+\rangle\langle++|01\rangle + |- \rangle\langle--|01\rangle$$

$$|1\rangle \quad \langle +|0\rangle\langle +|1\rangle = \frac{1}{2}$$

$$\begin{aligned}
 & \langle - | 0 1 \rangle \\
 &= \langle - | 0 \rangle \langle - | 1 \rangle \\
 &= \frac{-1}{2} \\
 & | 0 \rangle + | 1 \rangle - | 0 \rangle + | 1 \rangle
 \end{aligned}$$



$$\begin{array}{c}
 \text{Diagram:} \\
 \text{Left: } \text{Diagram of a loop with two vertices.} \\
 \text{Right: } \text{Diagram of two separate lines with vertices.} \\
 \text{Equation: } = \quad \text{Diagram of two separate lines with vertices} \\
 \qquad \qquad \qquad = |0\rangle\langle +|
 \end{array}$$

LHS

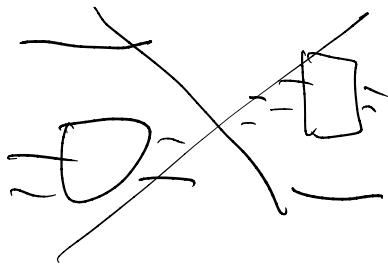
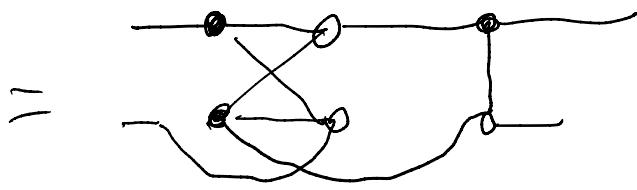
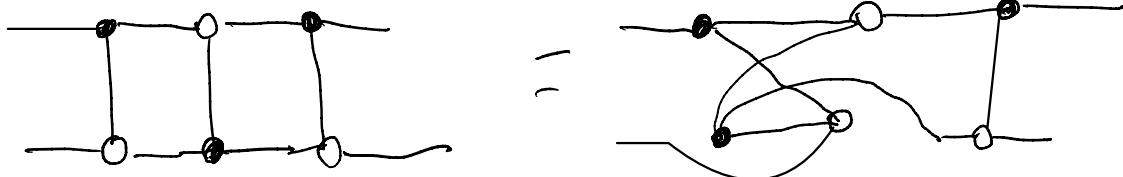
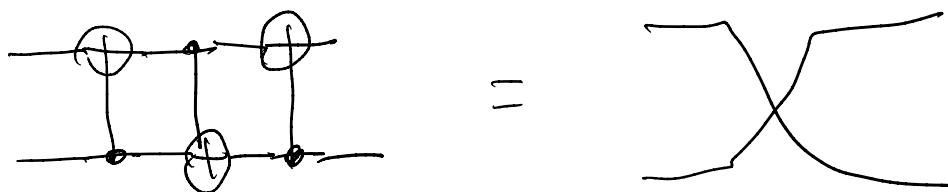
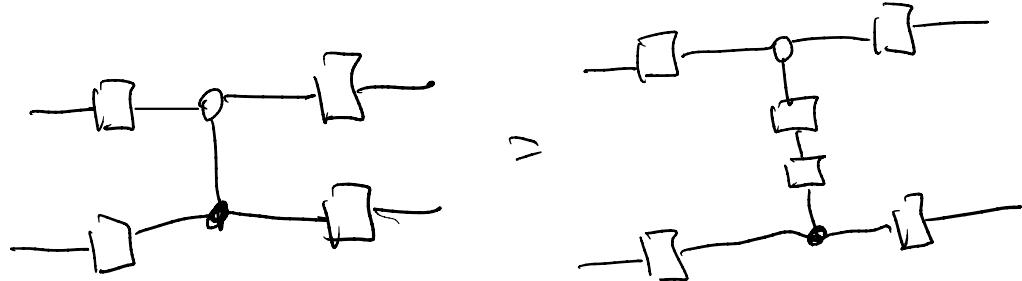
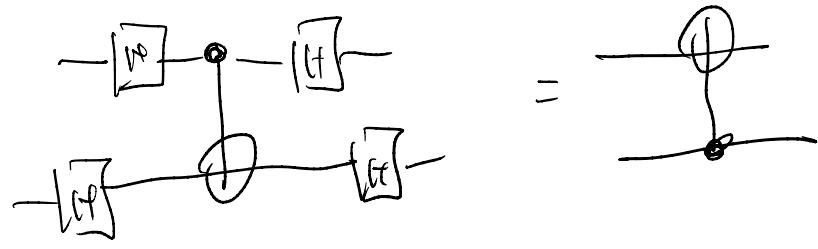
$$\begin{array}{c}
 \text{Diagram:} \\
 \text{Left: } \text{Diagram of a loop with two vertices.} \\
 \text{Right: } \text{Diagram of a loop with two vertices.} \\
 \text{Equation: } = \quad \text{Diagram of a loop with two vertices}
 \end{array}$$

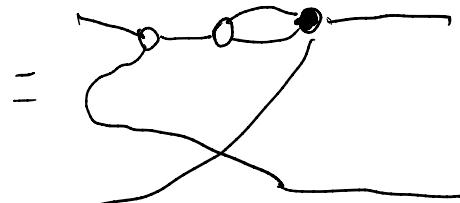
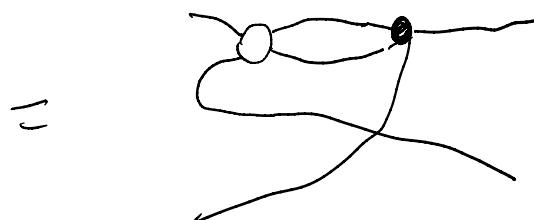
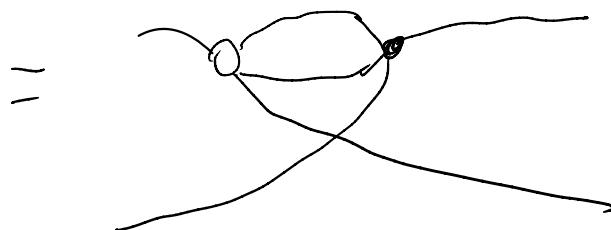
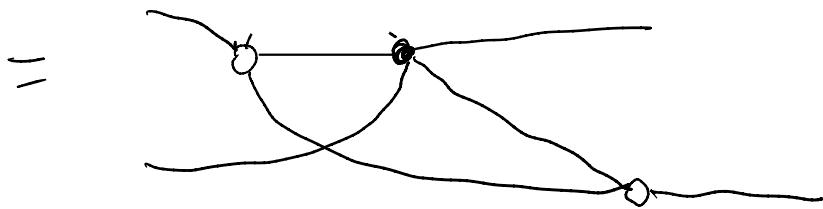
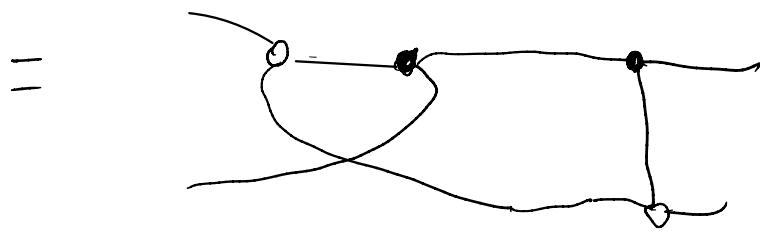
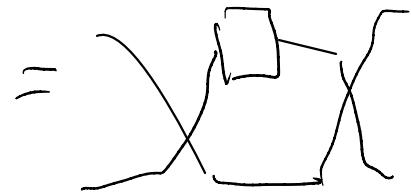
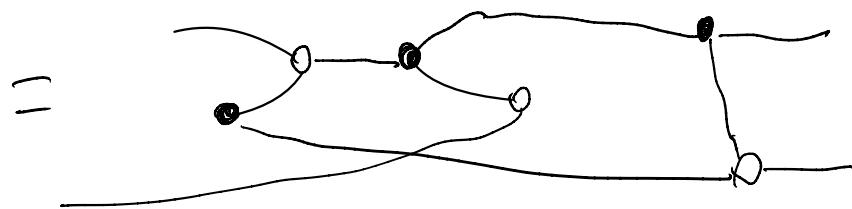
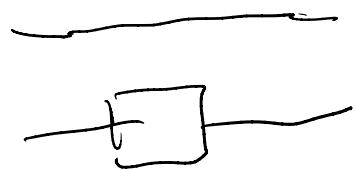
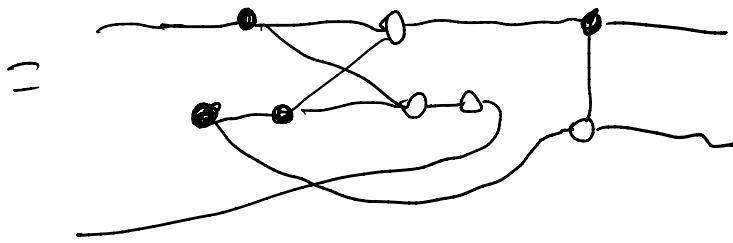
$$\begin{array}{c}
 \text{Diagram:} \\
 \text{Left: } \text{Diagram of a loop with two vertices.} \\
 \text{Right: } \text{Diagram of a loop with two vertices.} \\
 \text{Equation: } = \quad \text{Diagram of a loop with two vertices} \\
 \qquad \qquad \qquad = |0(+)\rangle
 \end{array}$$

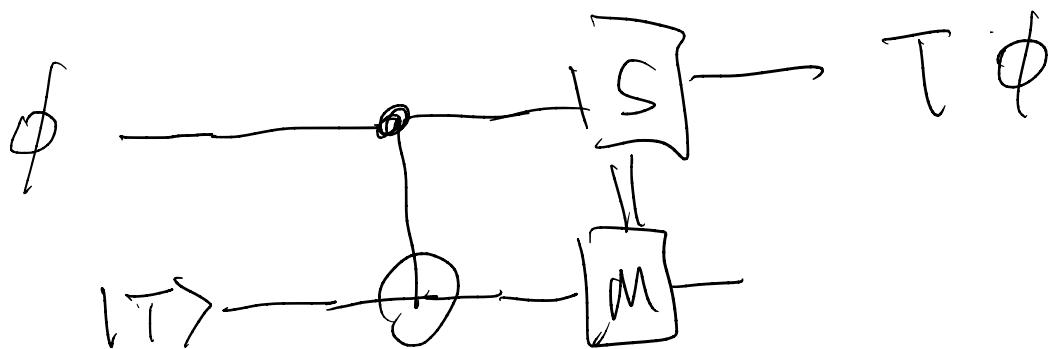
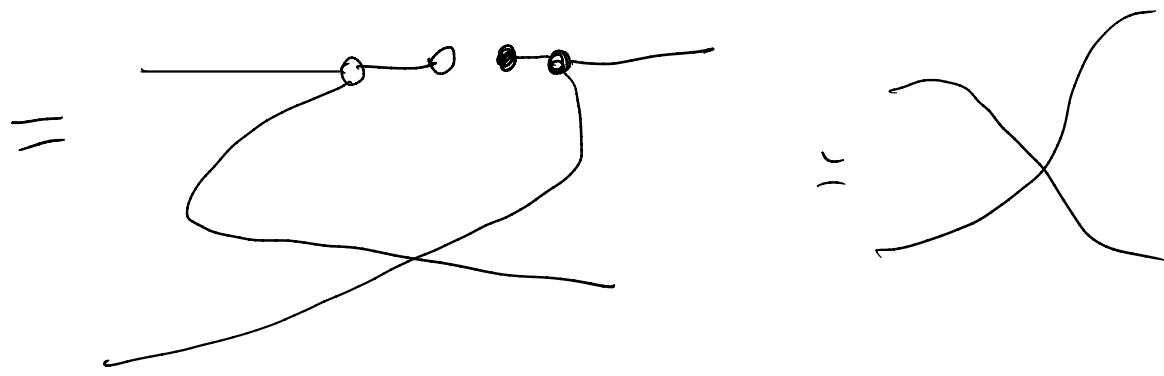
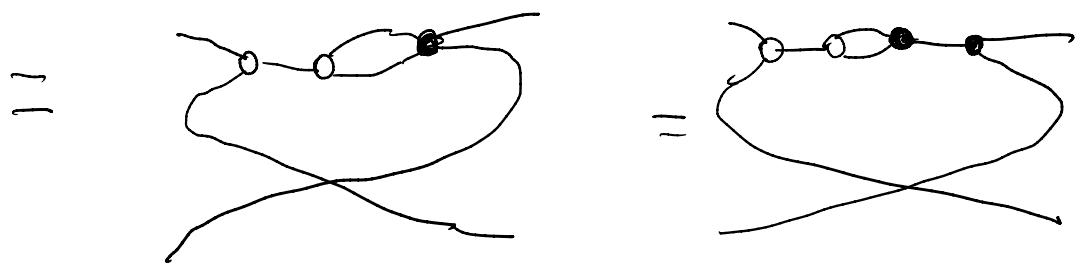
$$\begin{array}{c}
 \text{Diagram:} \\
 \text{Left: } \text{Diagram of a loop with two vertices.} \\
 \text{Right: } \text{Diagram of a loop with two vertices.} \\
 \text{Equation: } = \quad \text{Diagram of a loop with two vertices} \\
 \qquad \qquad \qquad = |0(+)\rangle
 \end{array}$$

$$\begin{array}{c}
 \text{Diagram:} \\
 \text{Left: } \text{Diagram of a loop with two vertices.} \\
 \text{Right: } \text{Diagram of a loop with two vertices.} \\
 \text{Equation: } = \quad \text{Diagram of a loop with two vertices}
 \end{array}$$

$$\begin{array}{c}
 \text{Diagram:} \\
 \text{Left: } \text{Diagram of a loop with two vertices.} \\
 \text{Right: } \text{Diagram of a loop with two vertices.} \\
 \text{Equation: } = \quad \text{Diagram of a loop with two vertices}
 \end{array}$$







$$= |0\rangle + e^{i\frac{\pi}{4}} |1\rangle$$

