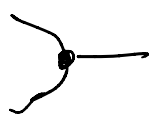
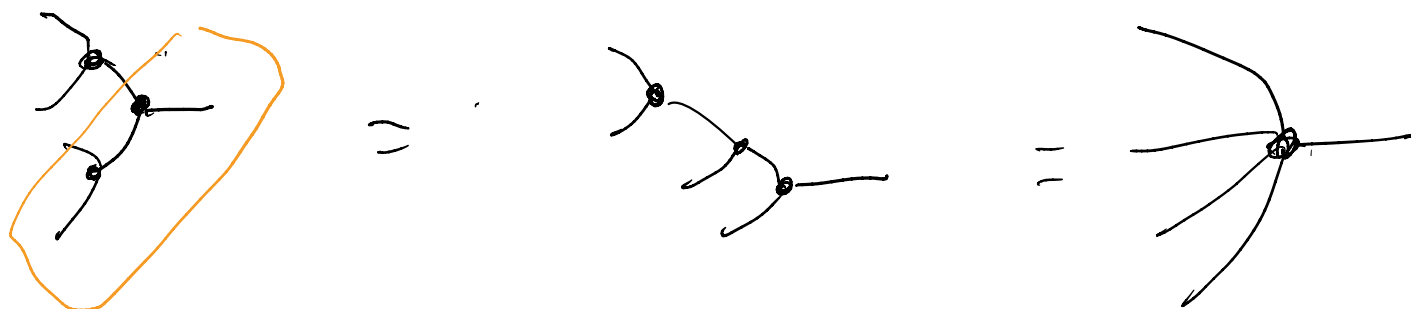
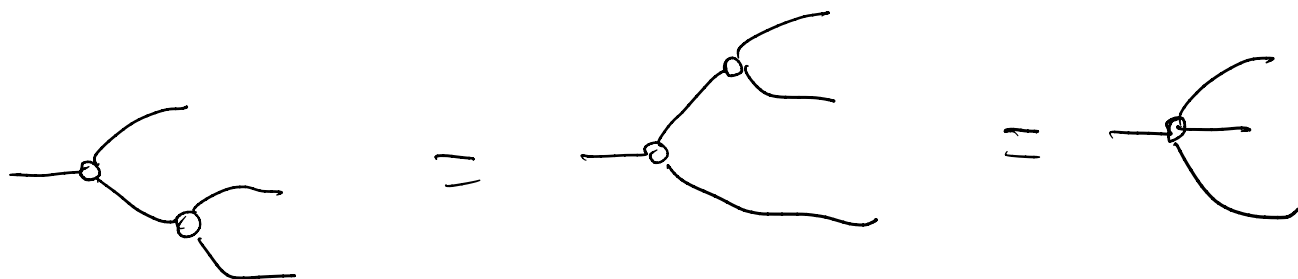
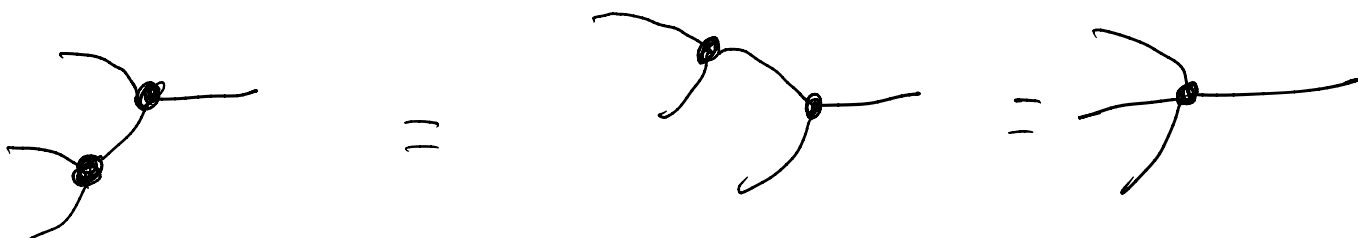




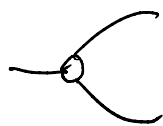


bialgebra



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

likes 'xor'.



like 'copy'

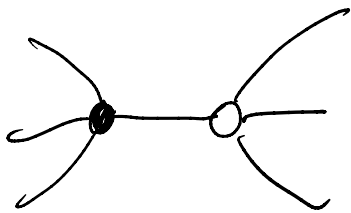
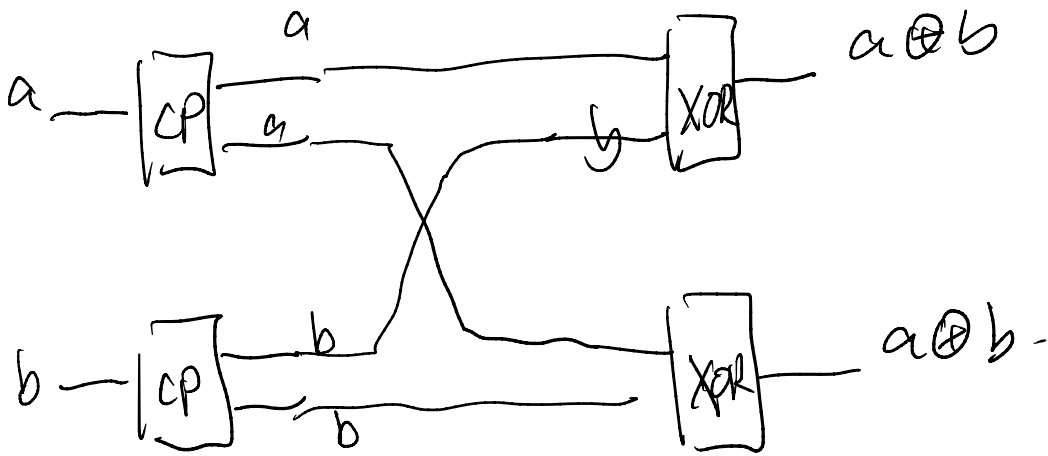
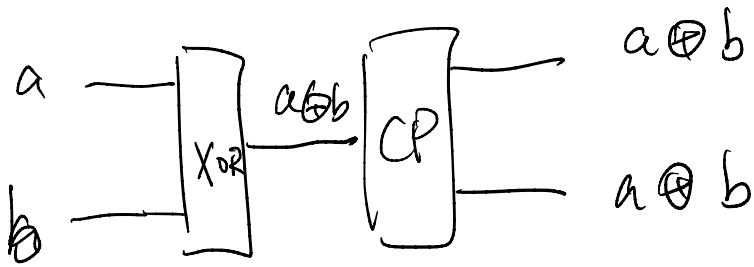
$$|00\rangle\langle 0| + |11\rangle\langle 1|$$

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

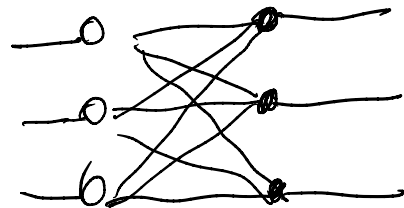
$$|1\rangle \quad \langle+|0\rangle\langle+|1\rangle = \frac{1}{\sqrt{2}}$$

$$\begin{aligned}
 & \langle \dots | 01 \rangle \\
 &= \langle \dots | 0 \rangle \langle \dots | 1 \rangle \\
 &= \frac{1}{2}
 \end{aligned}$$

$$|0\rangle + |1\rangle = |0\rangle + |1\rangle$$



=



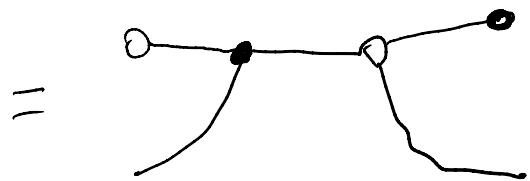
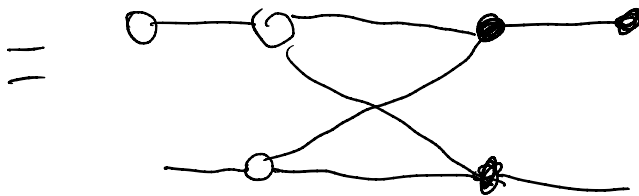
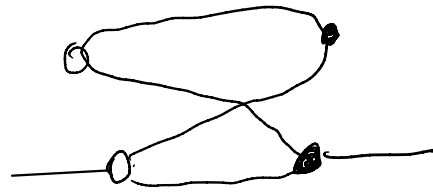
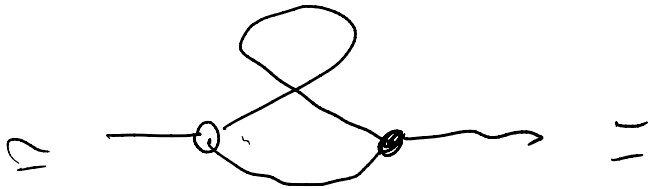


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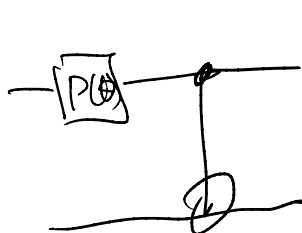
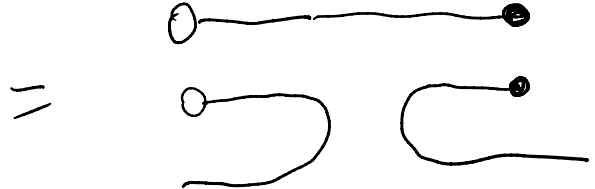
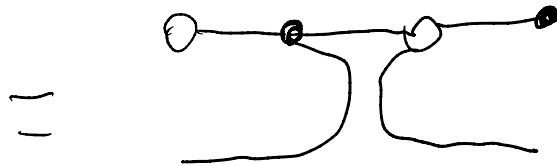


= $|0\rangle\langle +|$

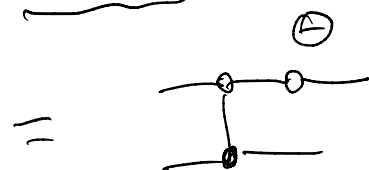
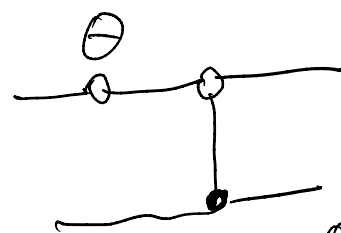
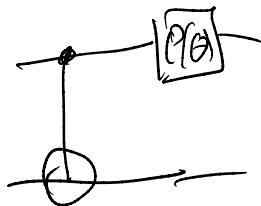
LHS

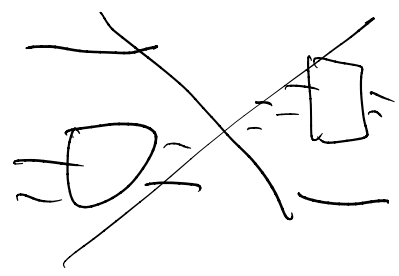
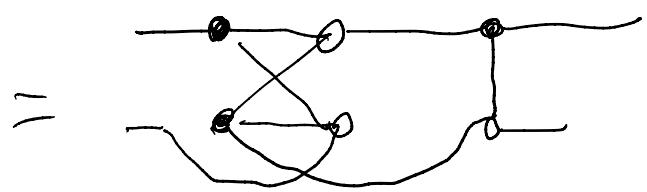
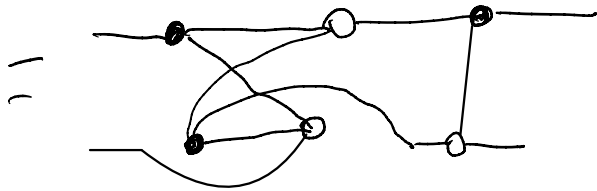
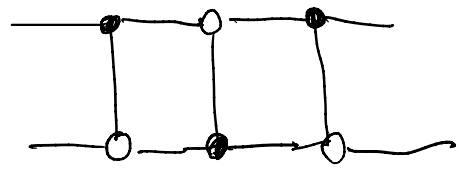
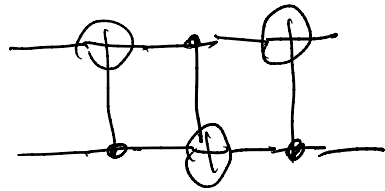
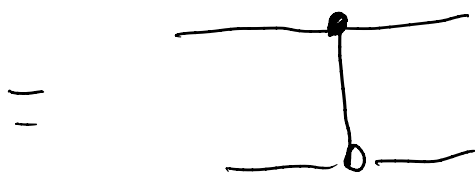
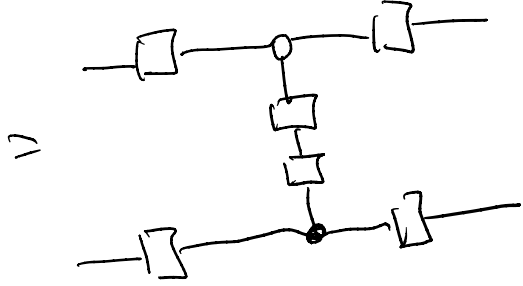
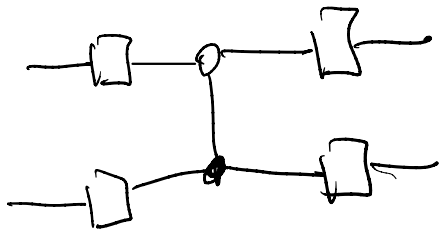
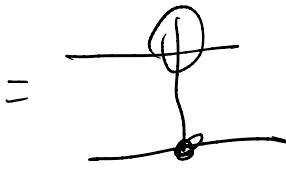
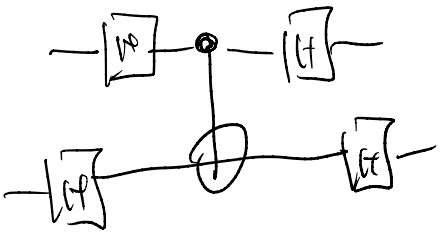


$\langle 0|+$

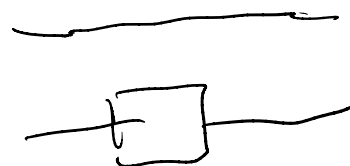
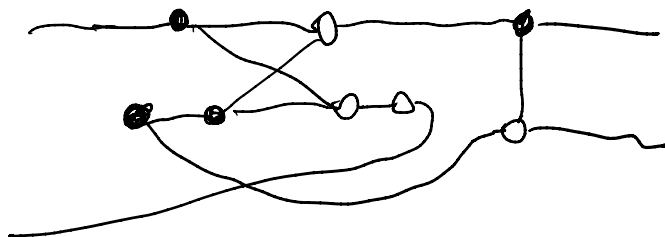


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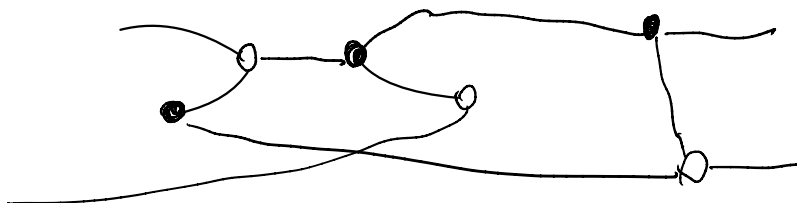




11



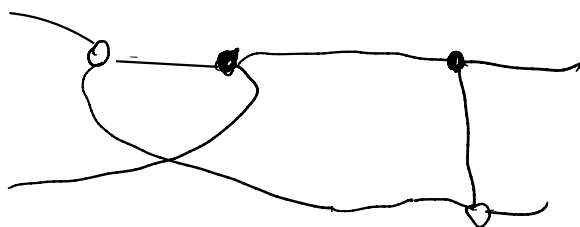
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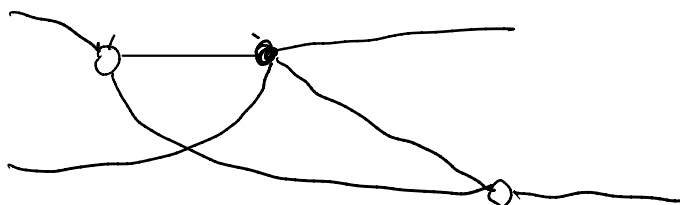
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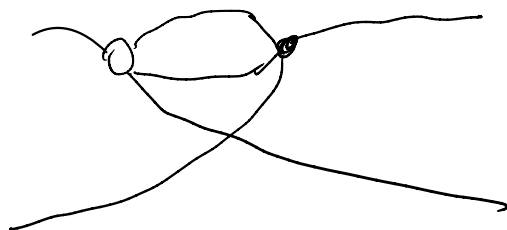
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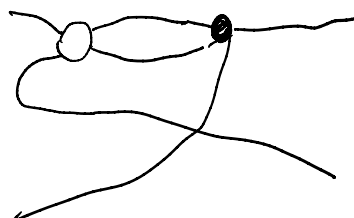
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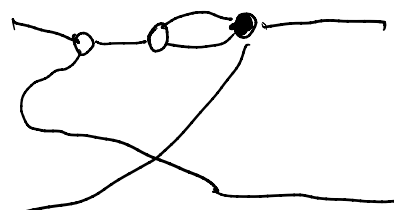
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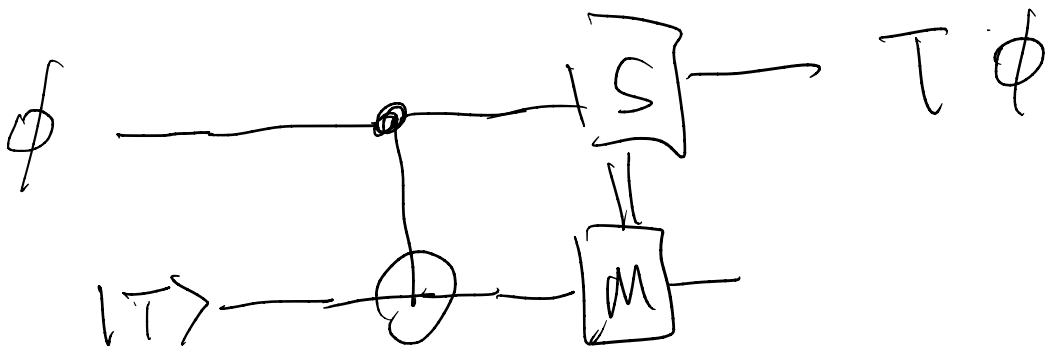
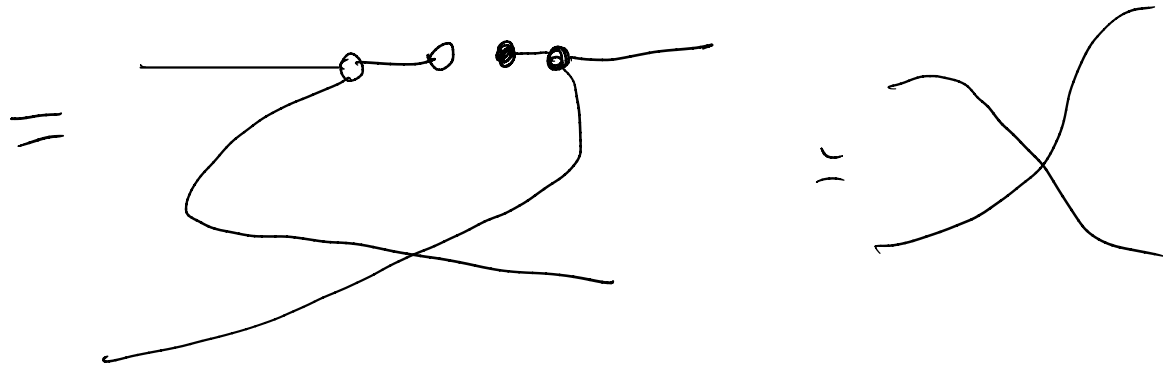
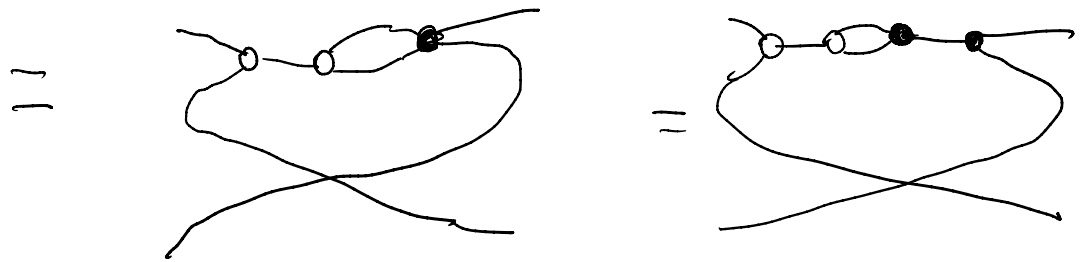


11



11





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

