

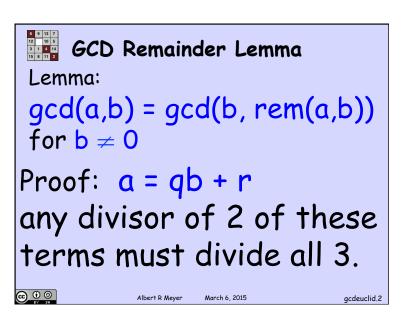
Computing GCD's The Euclidean Algorithm

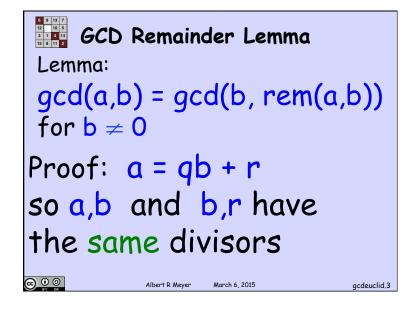
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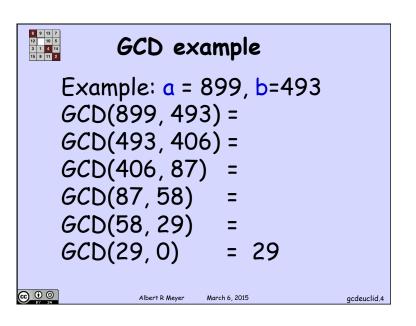
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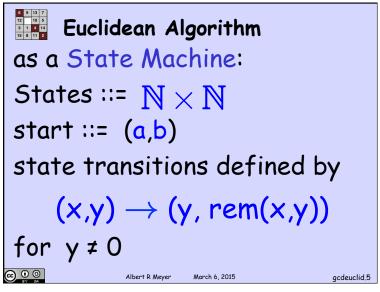
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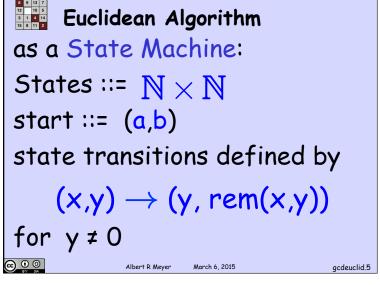
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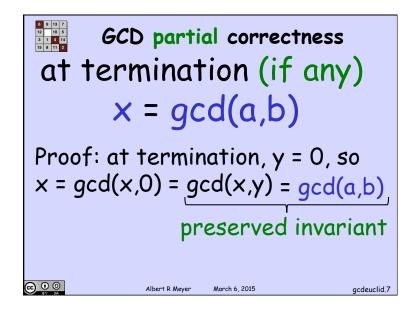


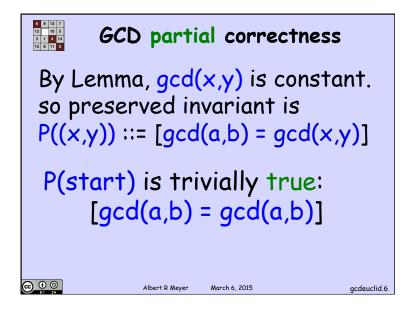


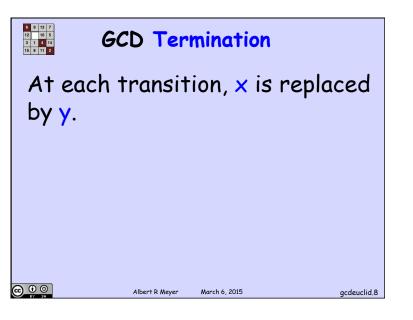














GCD Termination

At each transition, x is replaced by y. If $y \le x/2$, then x gets halved at this step.



Albert R Meyer

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GCD Termination

At each transition, x is replaced by y. If $y \le x/2$, then x gets halved at this step. If y > x/2, then rem(x,y) = x - y < x/2, so y gets halved when it is replaced by rem(x,y) after the next step.



Albert R Meyer

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GCD Termination

y halves or smaller at every other step, so reaches minimum in $\leq \log_2 b$ steps.

@ 0 0

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