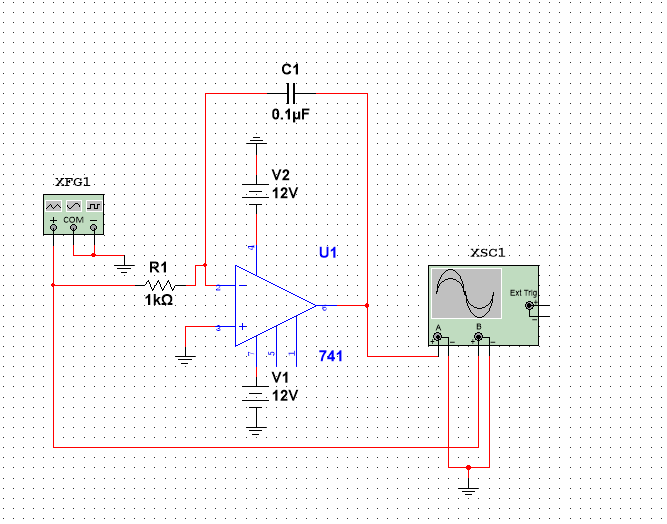
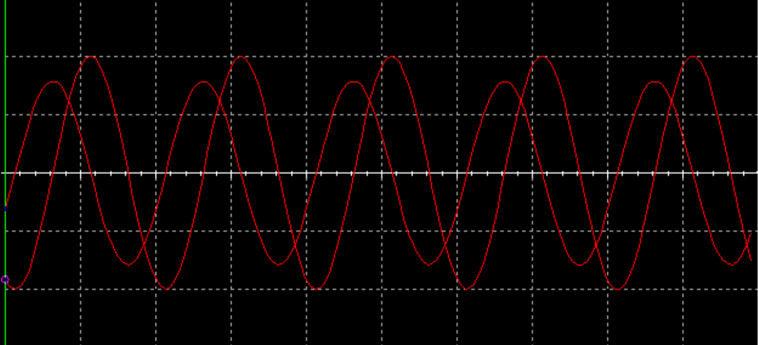
Prelab 3

Austin Brown

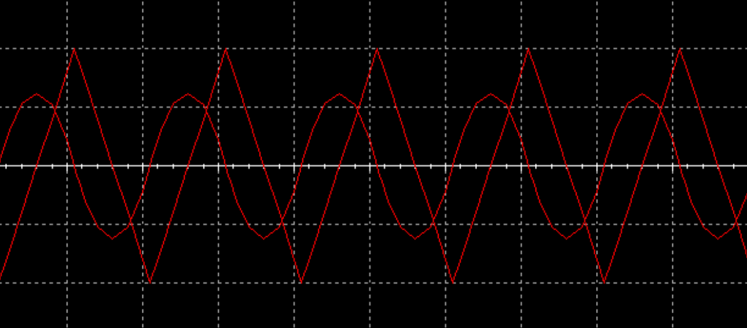
**Integrator Circuit**



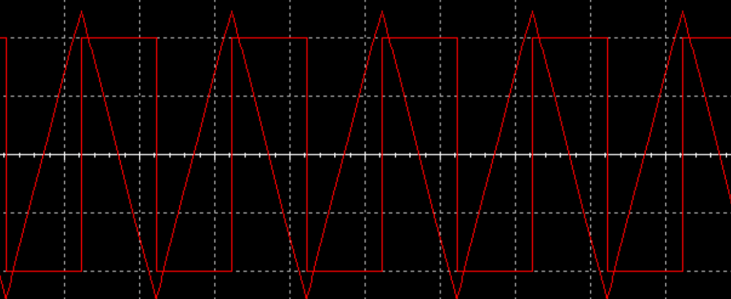
Sign Wave Integrator with 0.1 microfarad capacitor



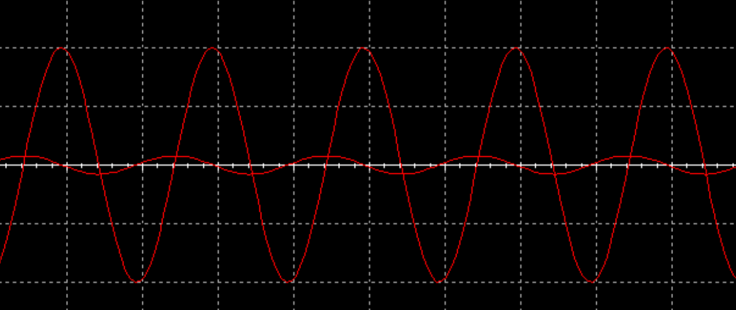
Triangle Wave Integrator with 0.1 microfarad capacitor



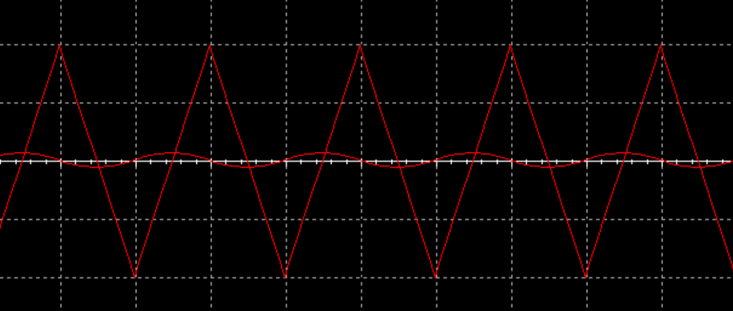
Square Wave Integrator with 0.1 microfarad capacitor



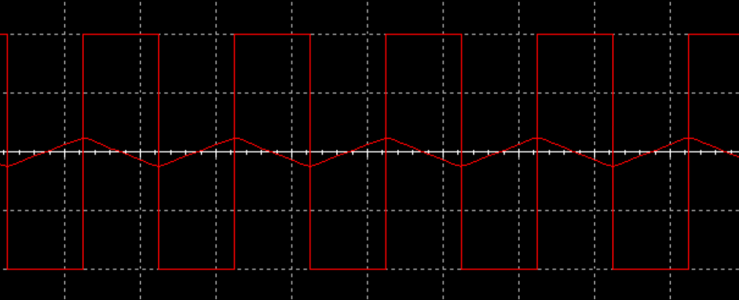
Sign Wave Integration with a 1 microfarad capacitor



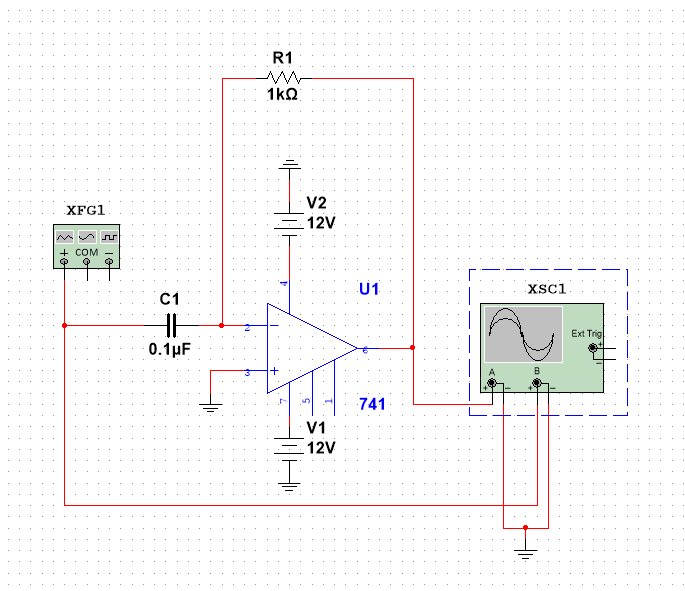
Triangle Wave Integration with a 1 microfarad capacitor



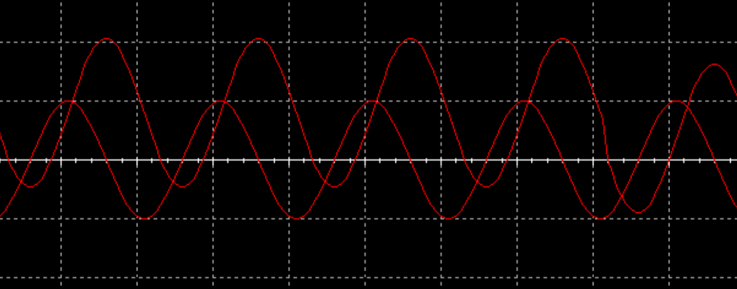
Square Wave Integration with a 1 microfarad capacitor



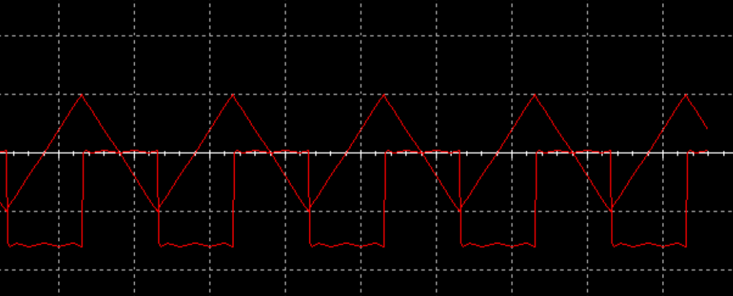
**Differentiator Circuit**

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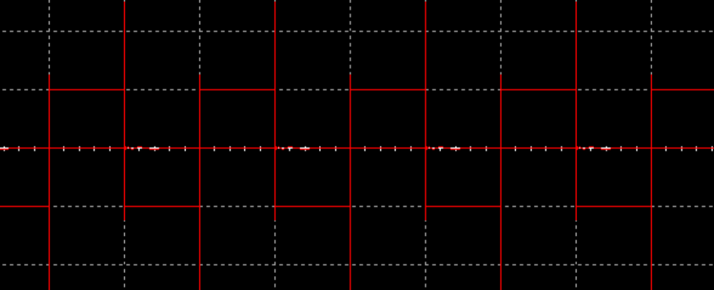
Sign Wave Differentiator with 0.1 microfarad capacitor



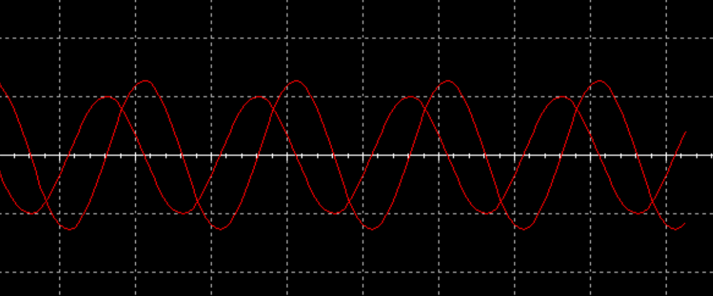
Triangle Wave Differentiator with 0.1 microfarad capacitor



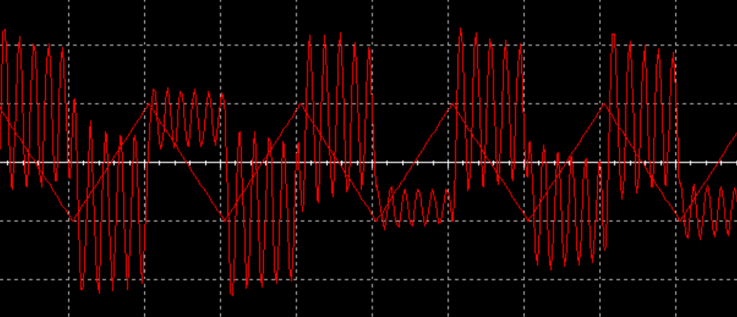
Square Wave Differentiator with 0.1 microfarad capacitor



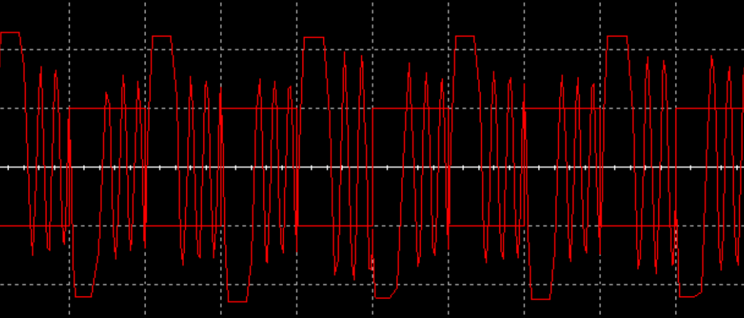
Sign Wave Differentiator with 1 microfarad capacitor



Triangle Wave Differentiator with 1 microfarad capacitor



Square Wave Differentiator with 1 microfarad capacitor



The larger the capacitor, the smaller the gain. The relationship between inputs and outputs is shown below.

|  |  |  |
| --- | --- | --- |
| Input | Integrator | Differentiator |
| Sine | Phase Shifted Sine | Voltage Shifted Sine |
| Triangle | Sine | Voltage Shifted Square |
| Square | Triangle | Impulse |