

Structured Electronic Design

Introduction to balancing

Anton J.M. Montagne

Compensation

Compensation

Additive compensation:

Compensation

Additive compensation:

Reproduce the error

Compensation

Additive compensation:

Reproduce the error

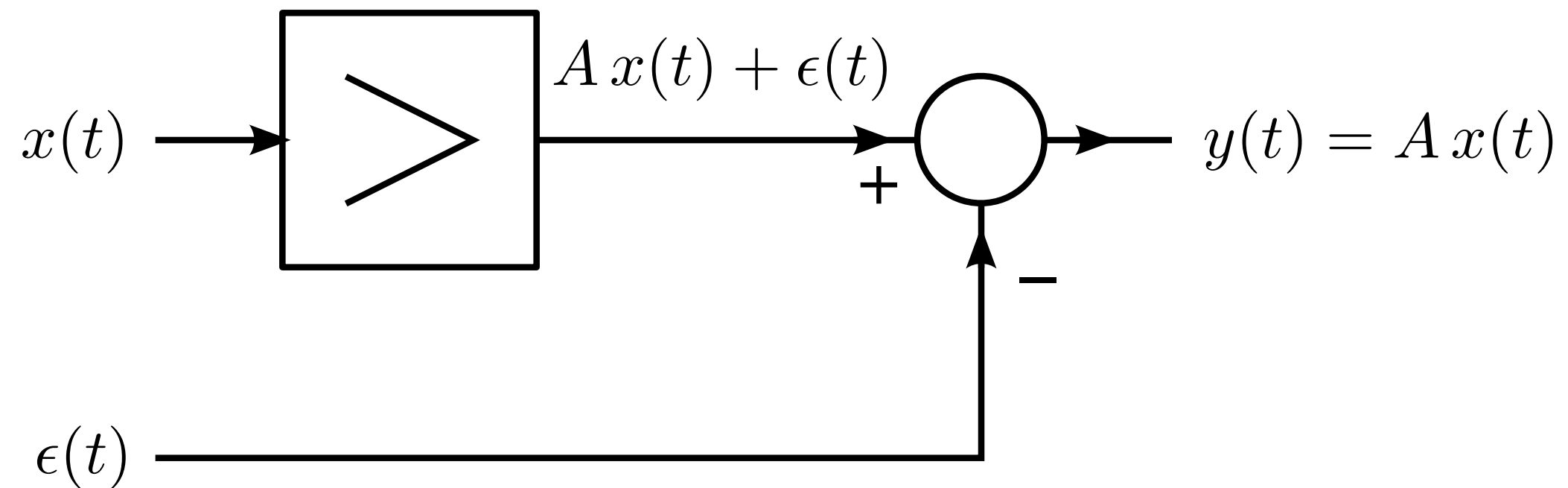
Subtract it from the signal with the error

Compensation

Additive compensation:

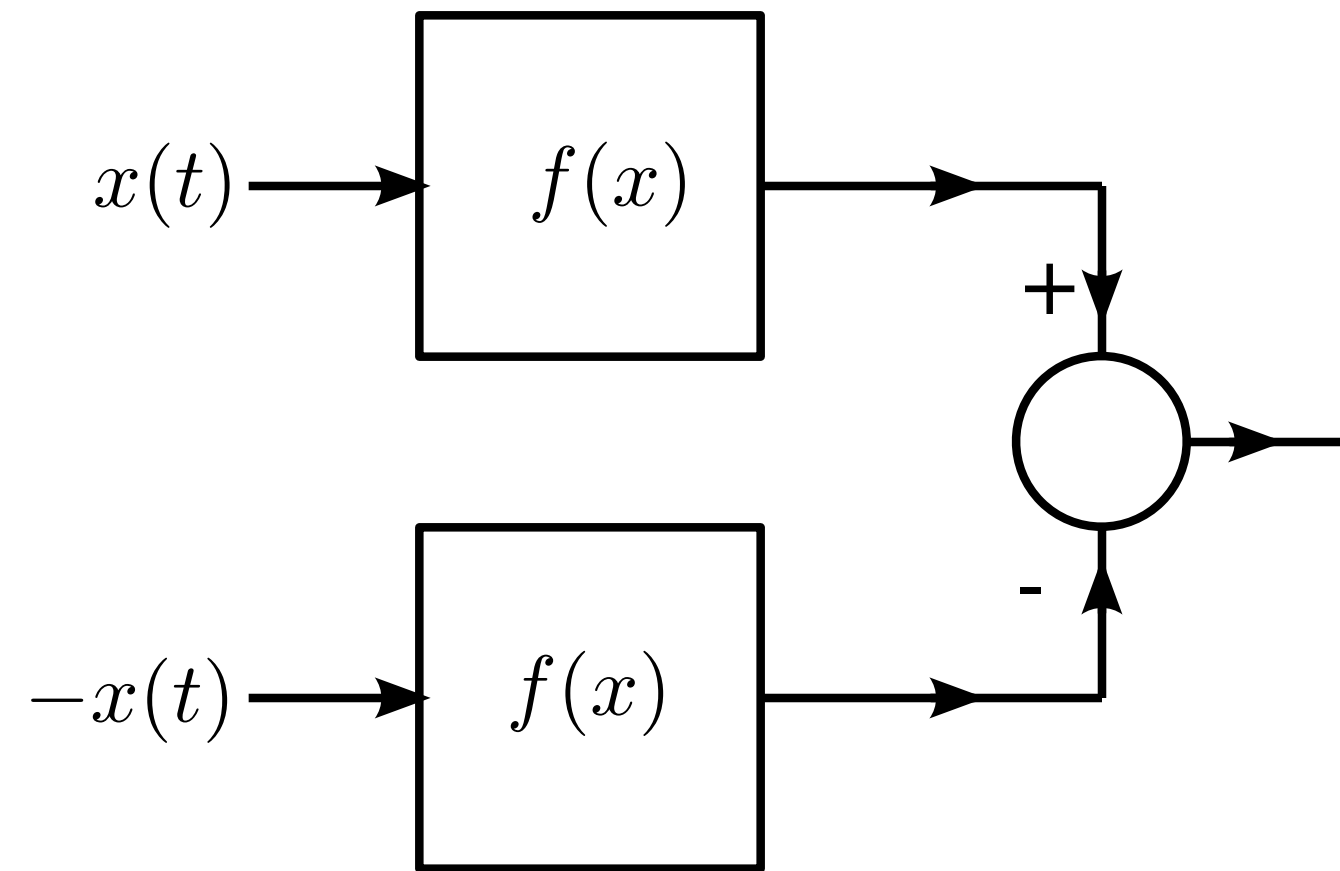
Reproduce the error

Subtract it from the signal with the error



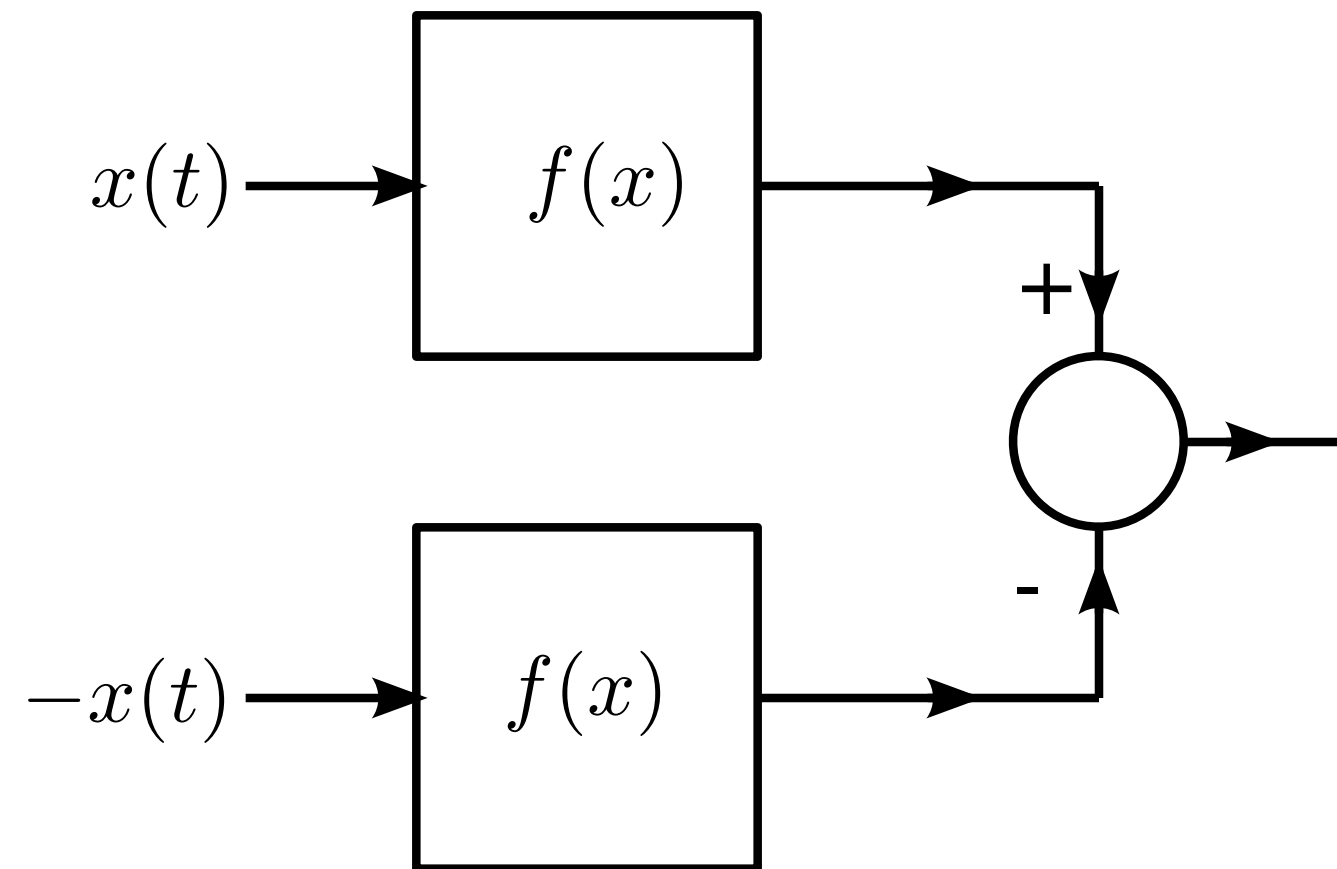
Balancing with Identical Elements

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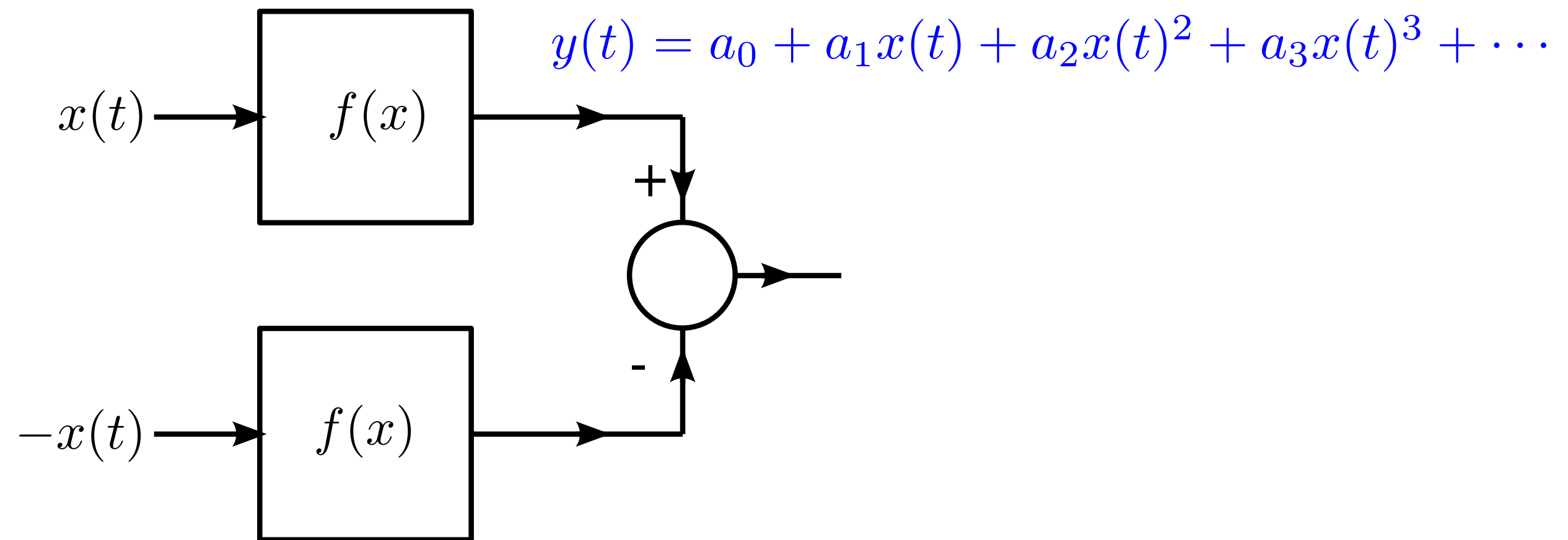
Balancing with Identical Elements

$$f(x) = a_0 + a_1x + a_2x^2 + a_3x(t)^3 + \dots$$



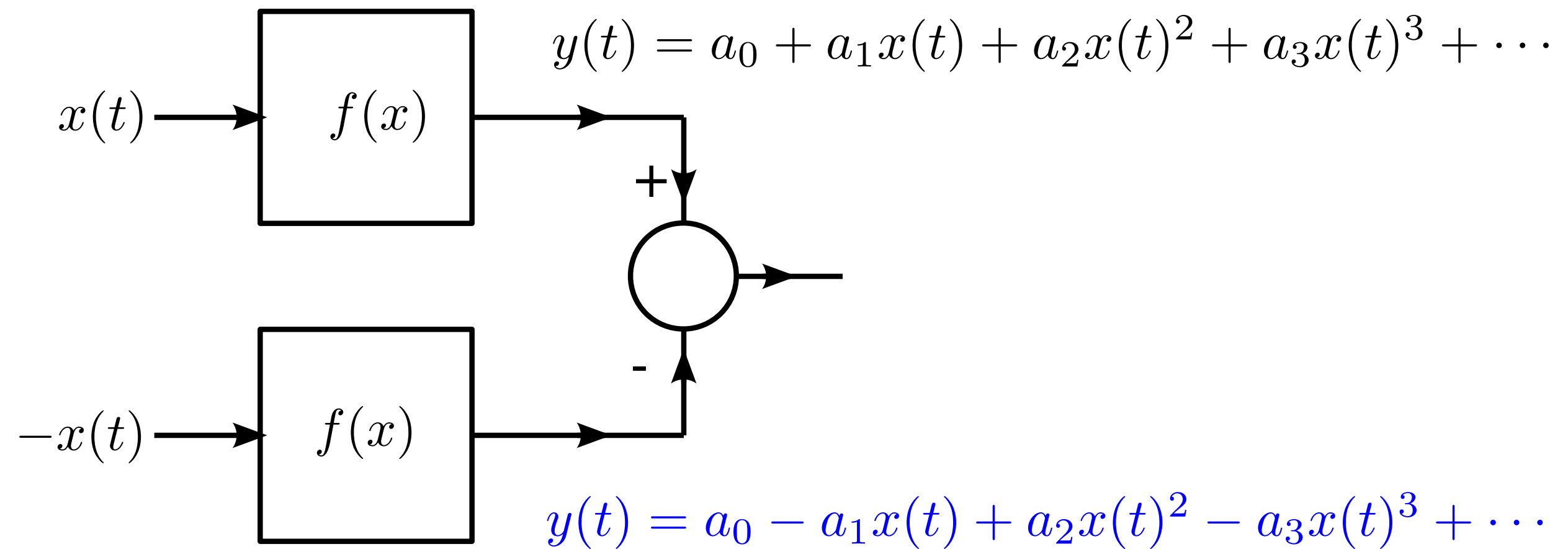
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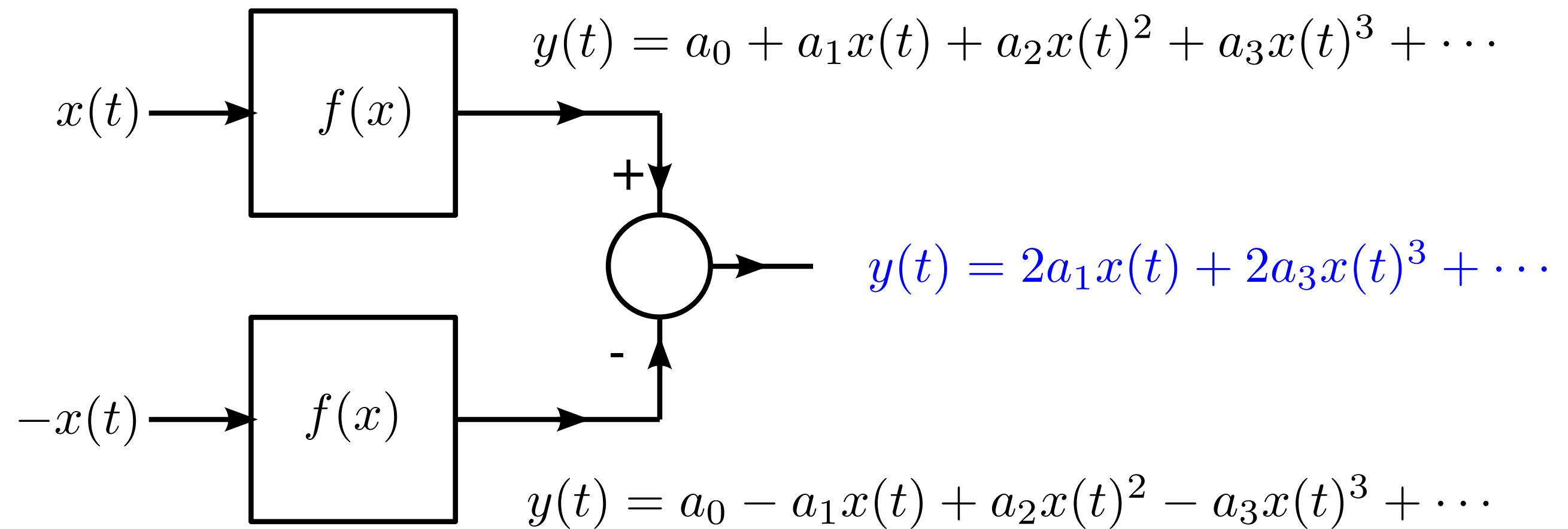
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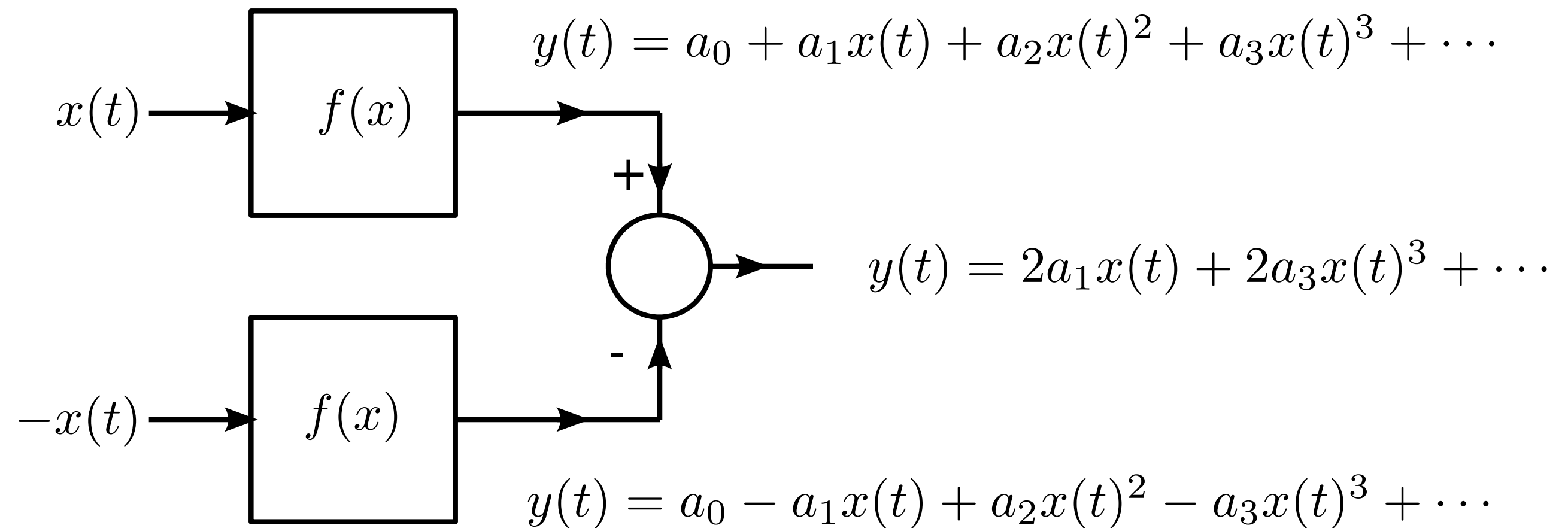
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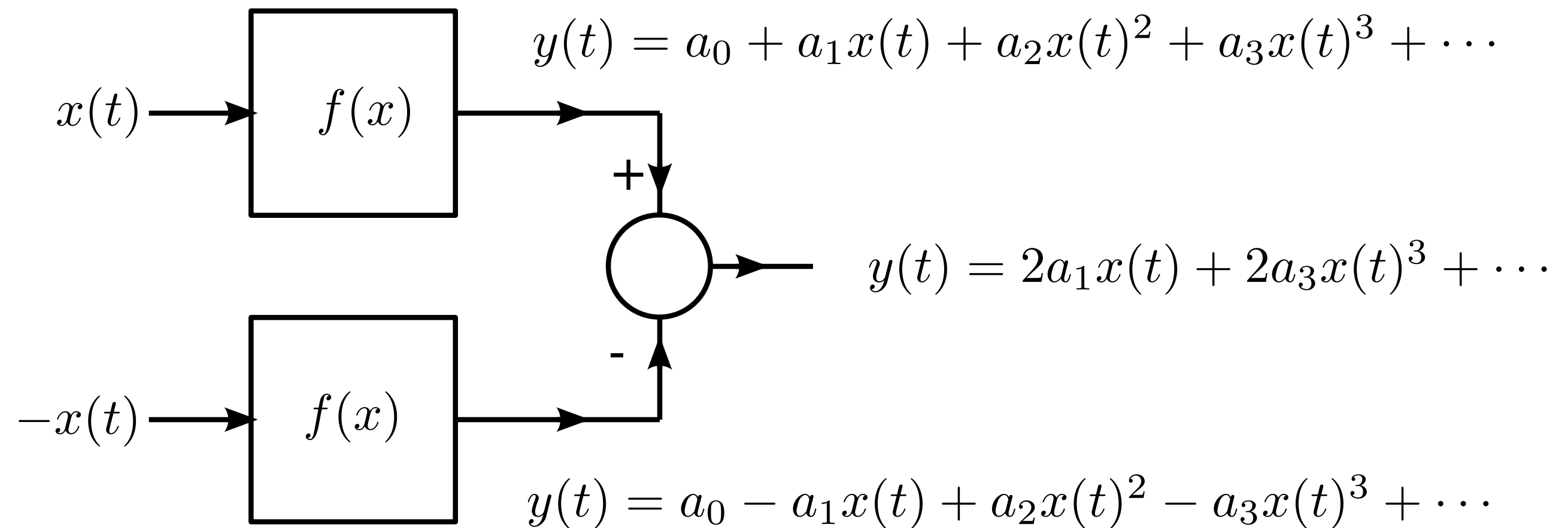
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Error reproduction with an identical system

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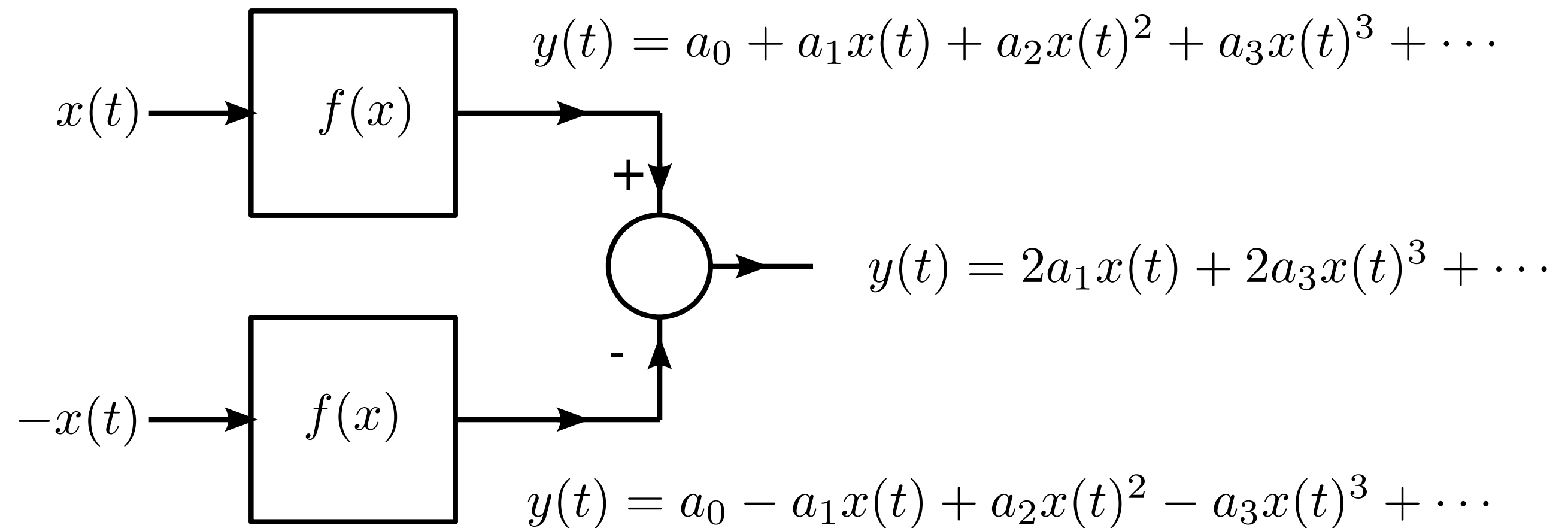


Error reproduction with an identical system

Even terms cancel

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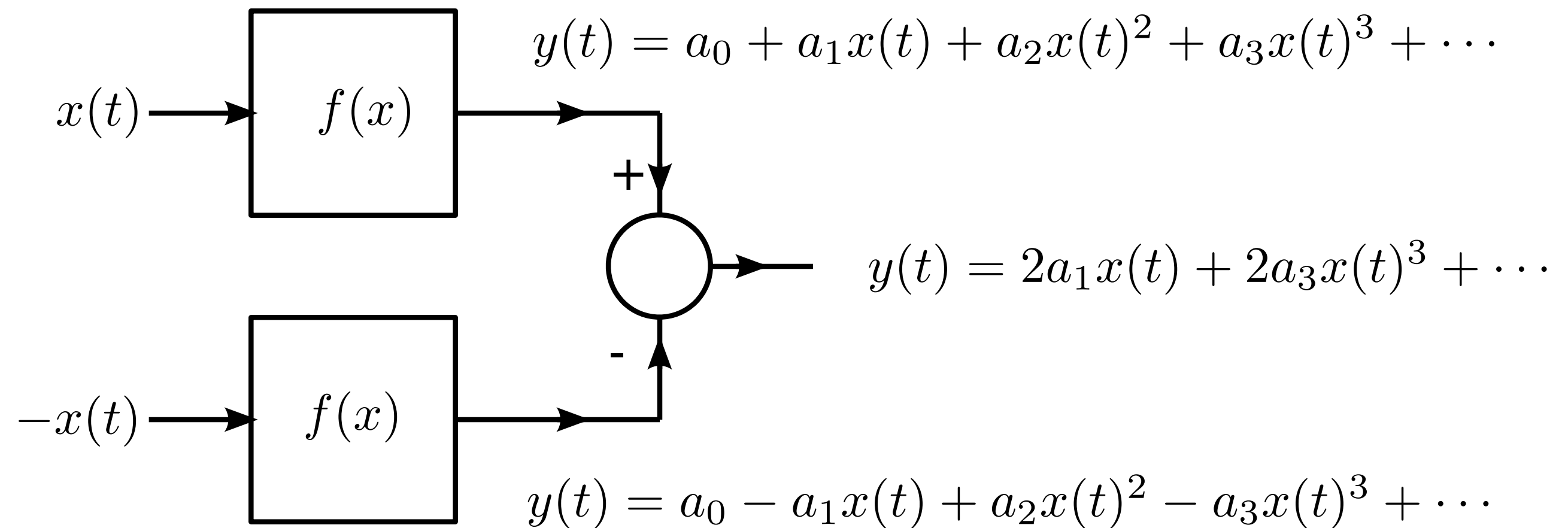
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Error reduction limited by matching

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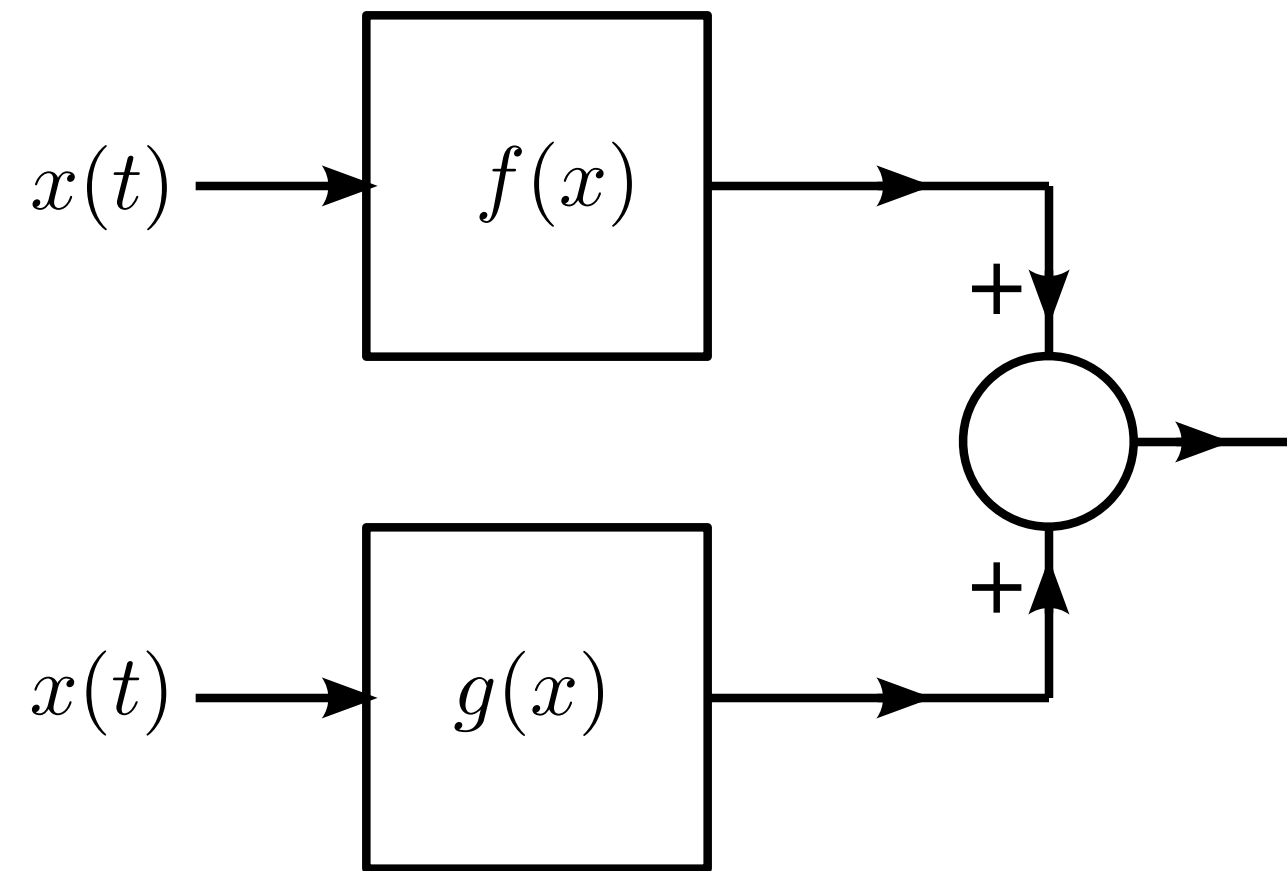
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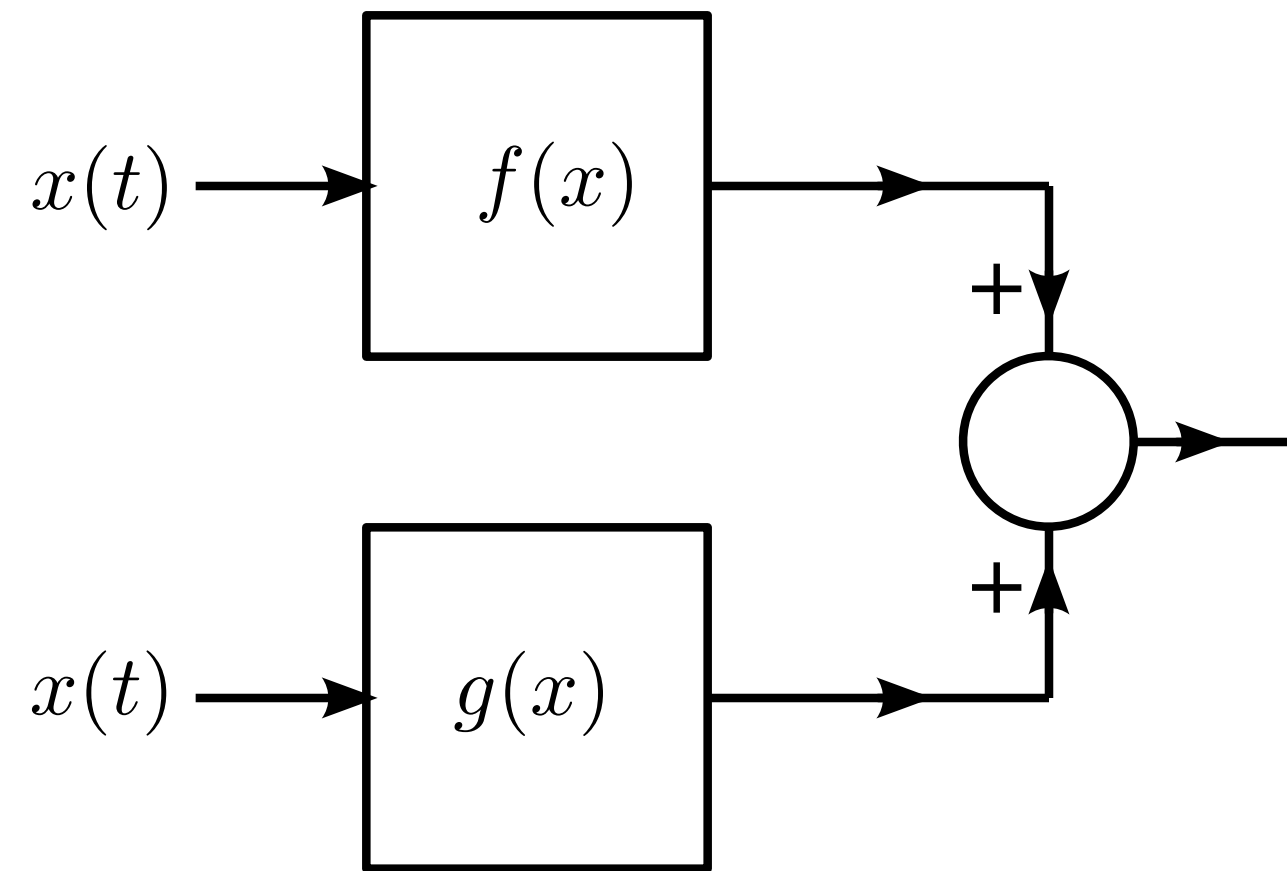
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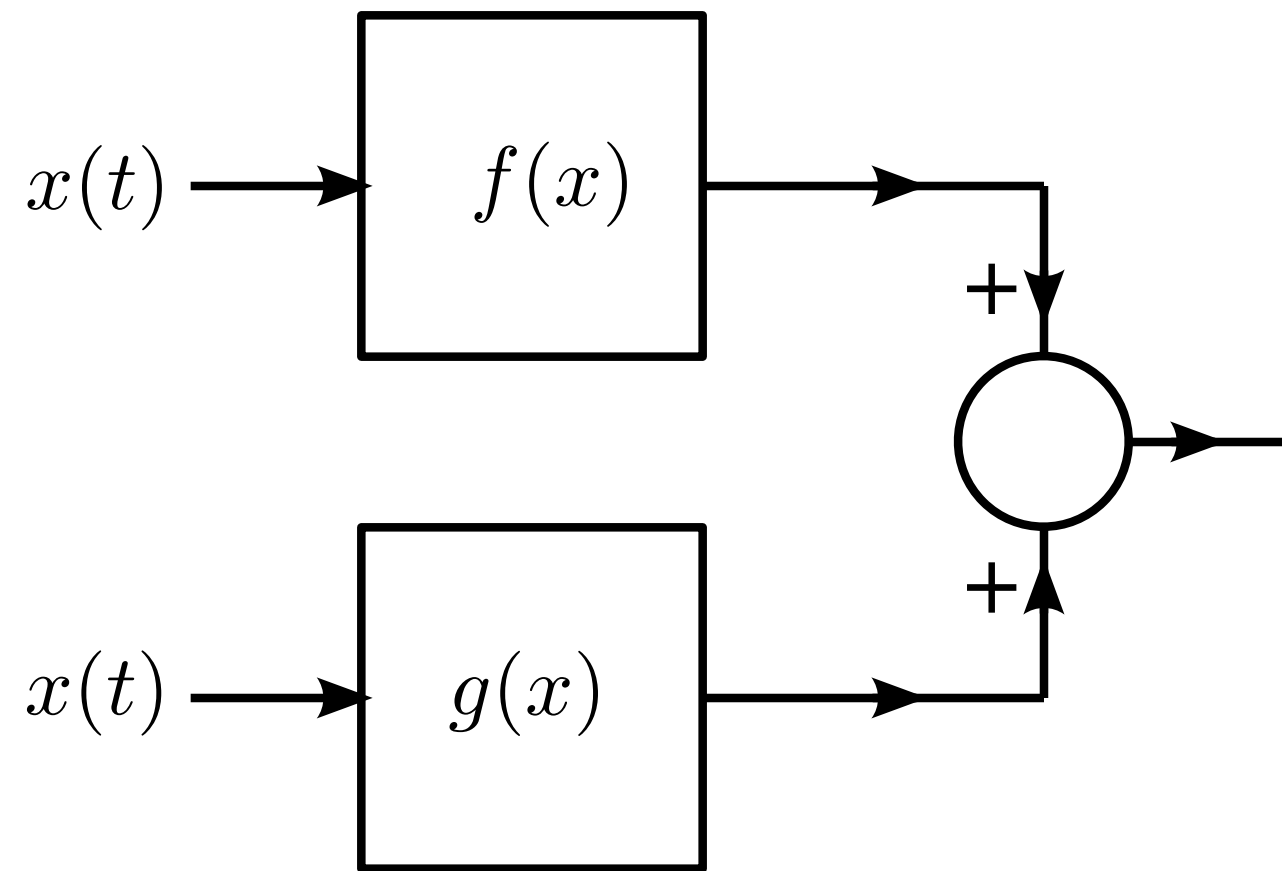
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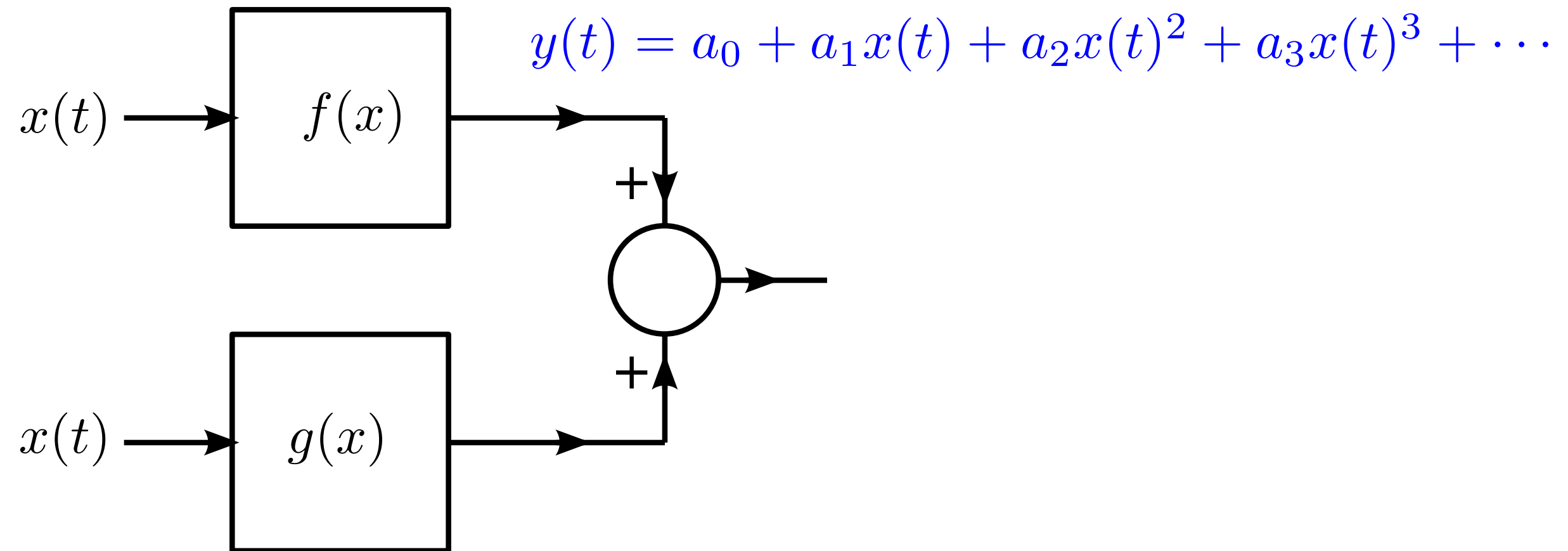
$$g(x) = -a_0 + a_1x - a_2x^2 + a_3x(t)^3 - \dots$$



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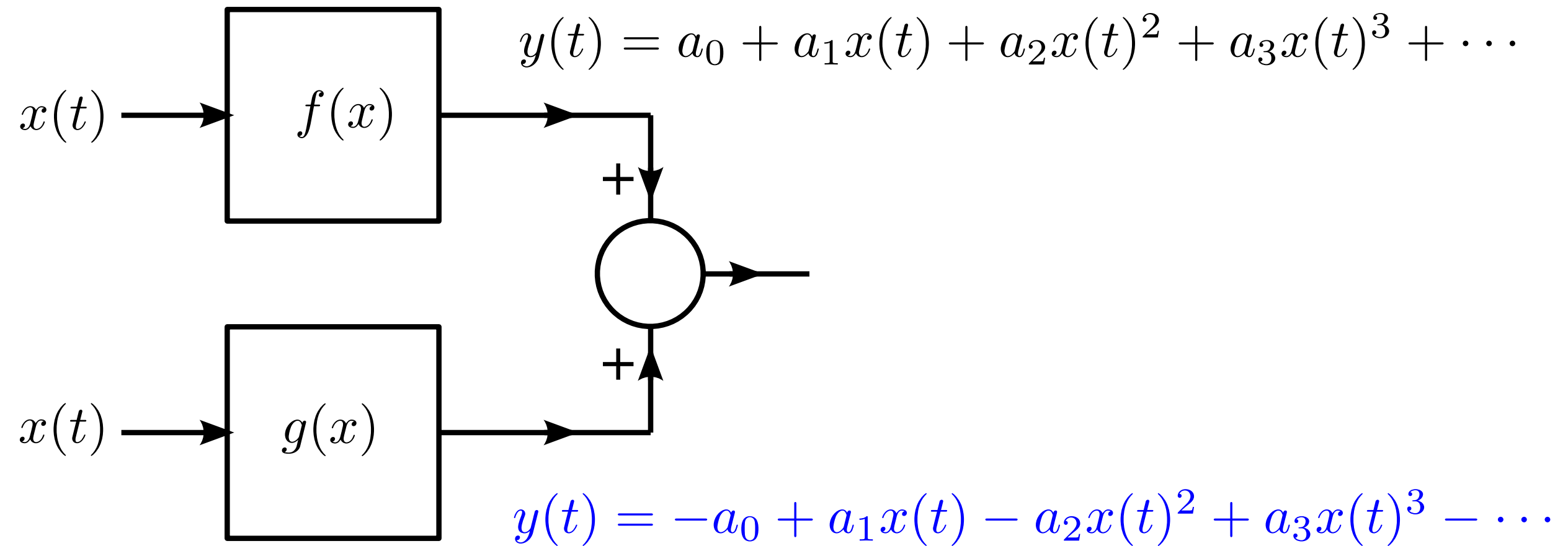
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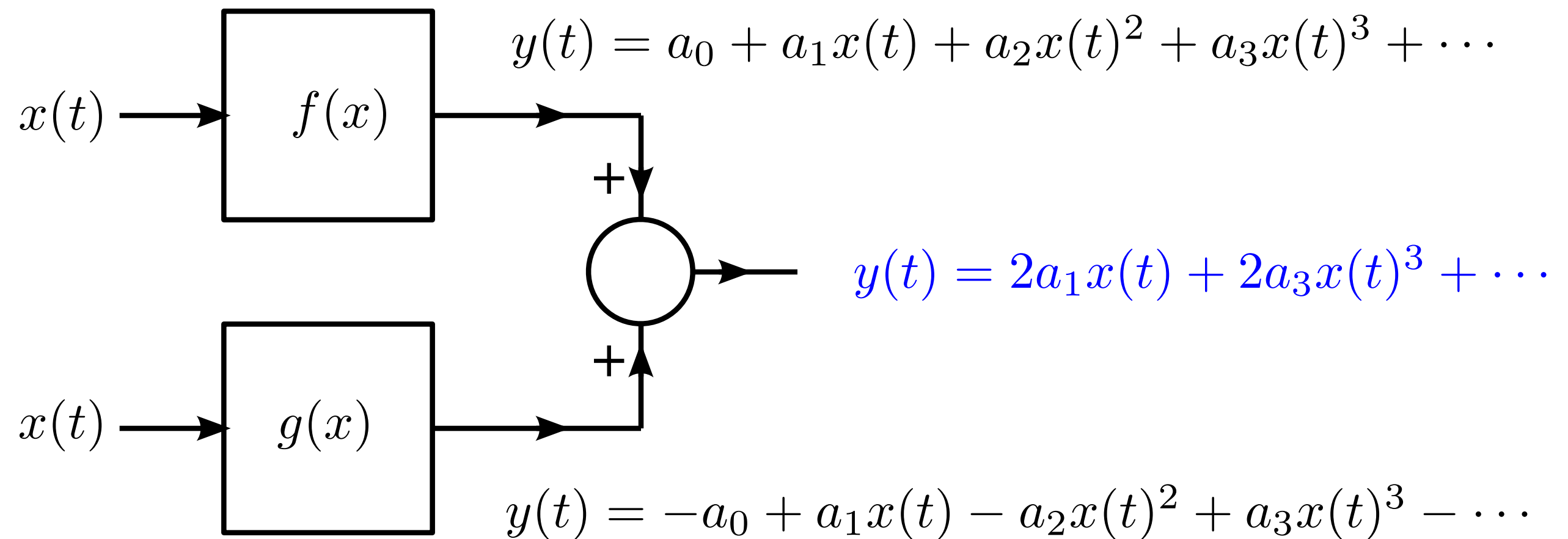
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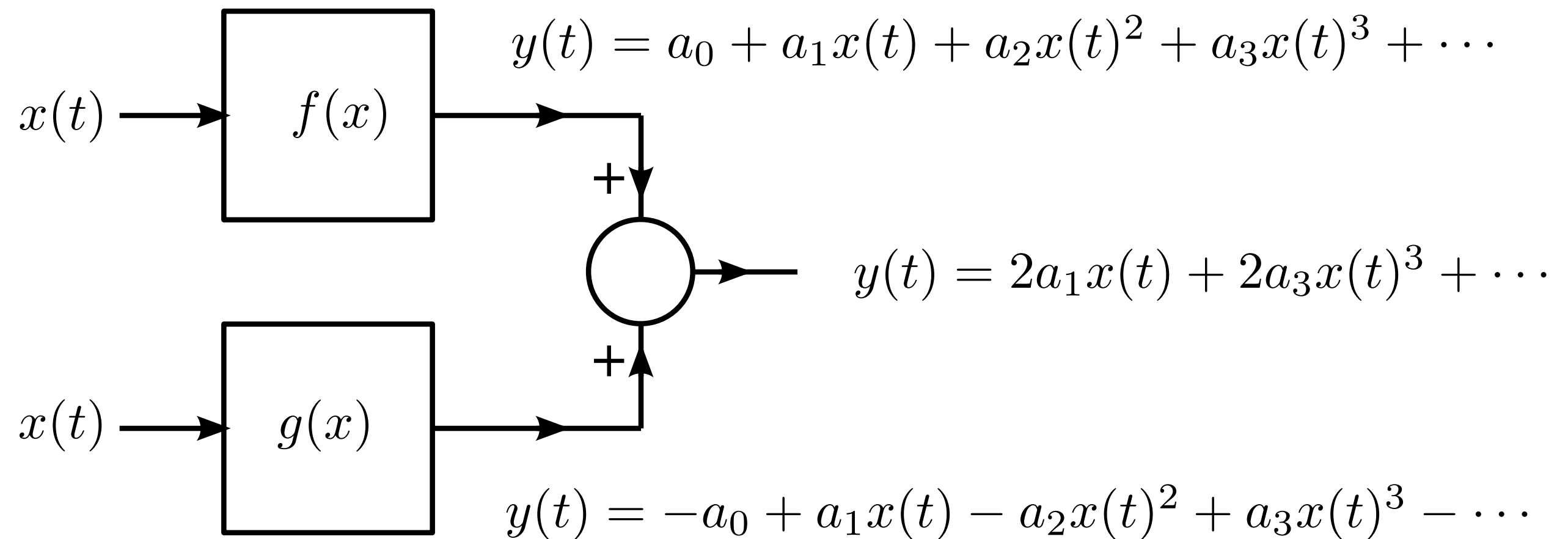
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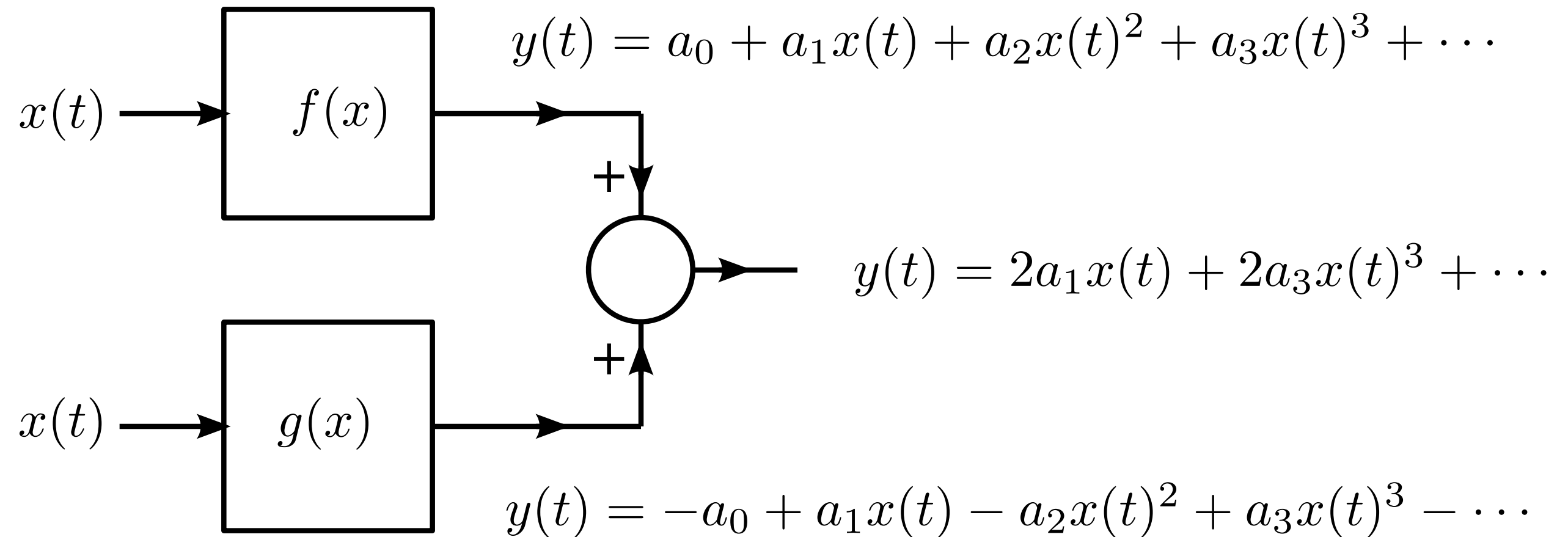


Error reproduction with a complementary system: $g(x) = -f(-x)$

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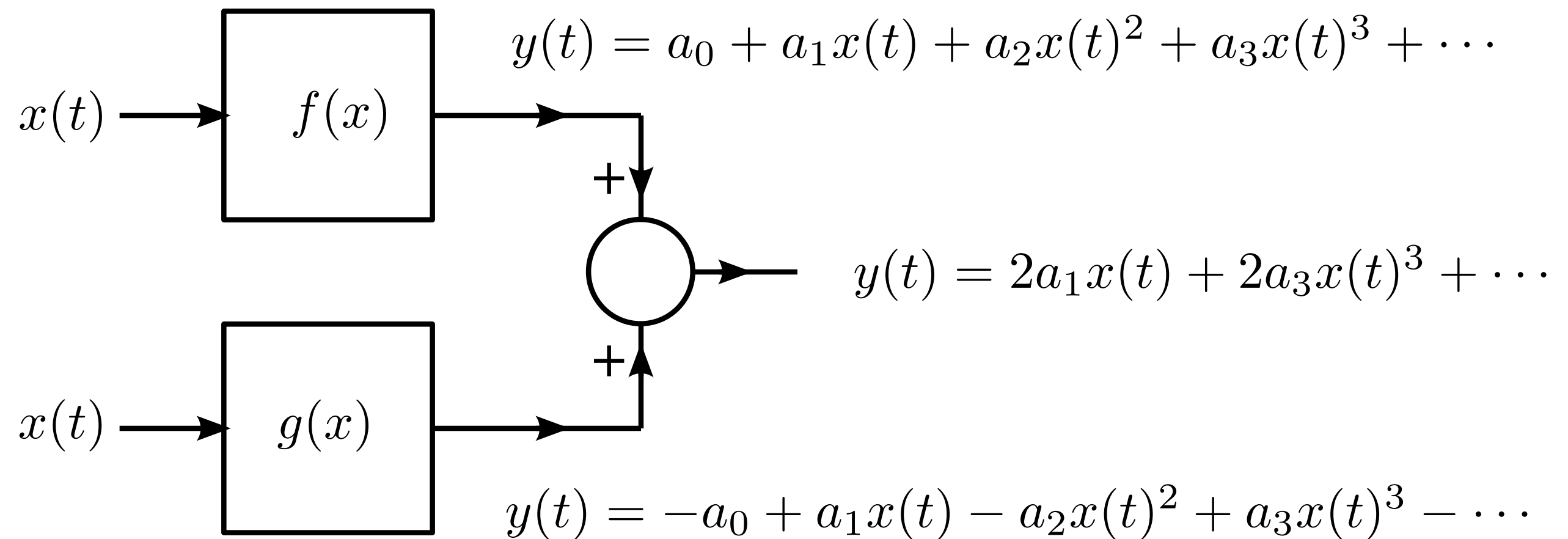
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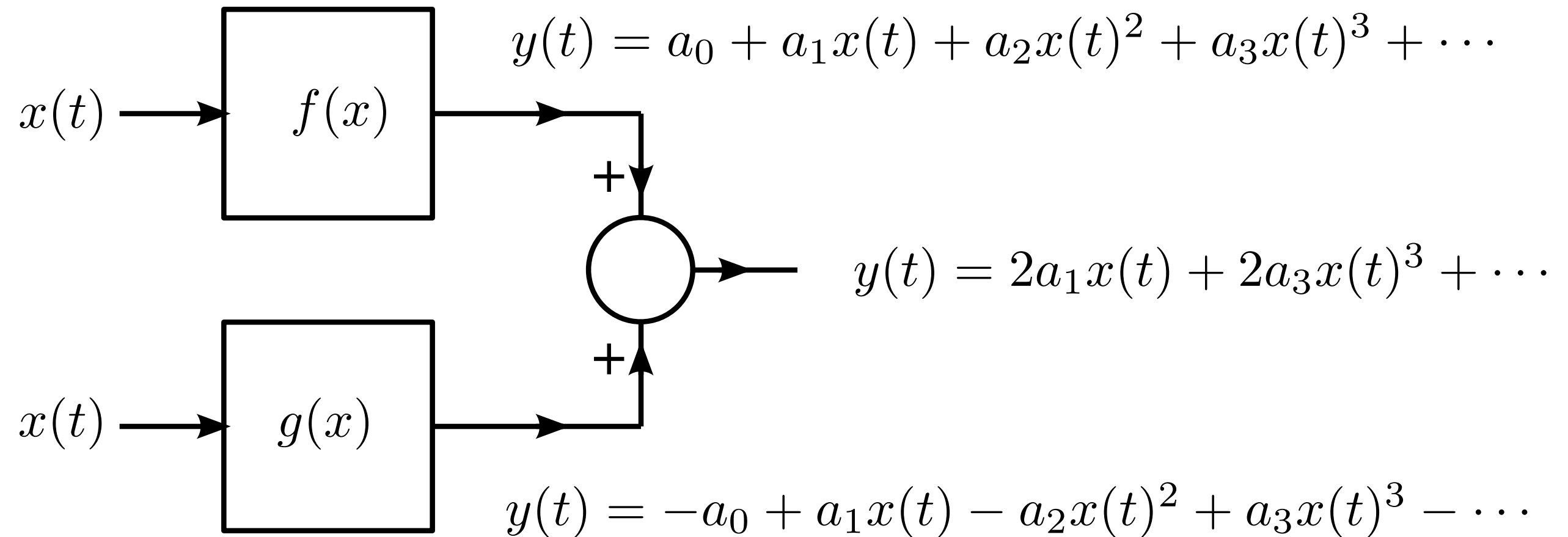
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