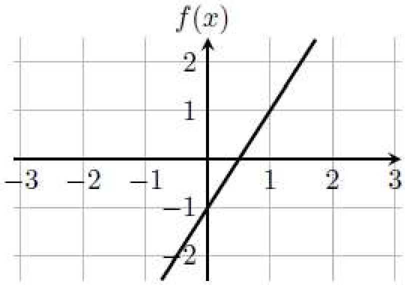

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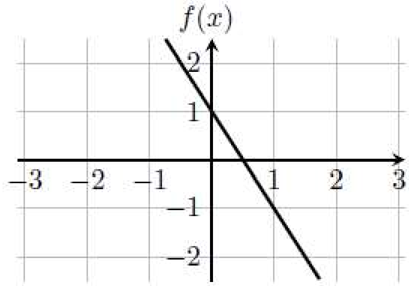

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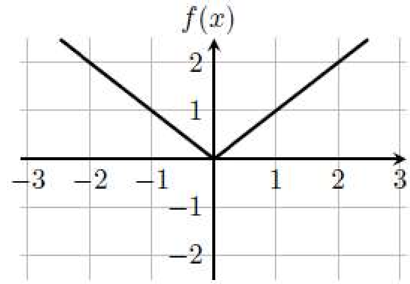

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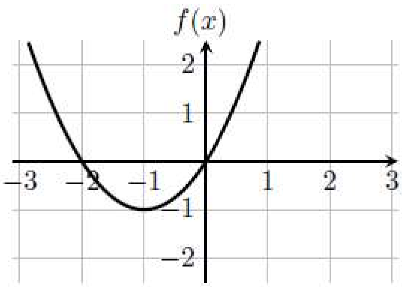

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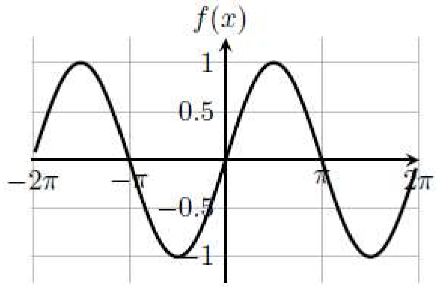

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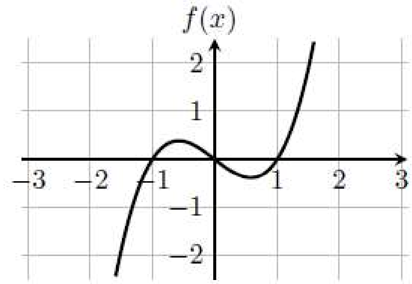

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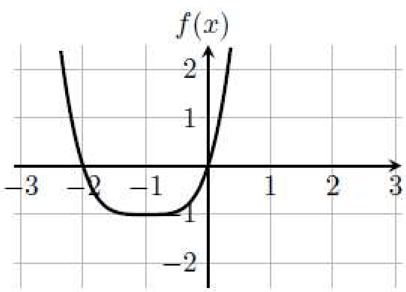

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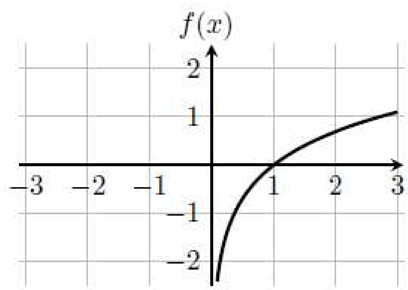

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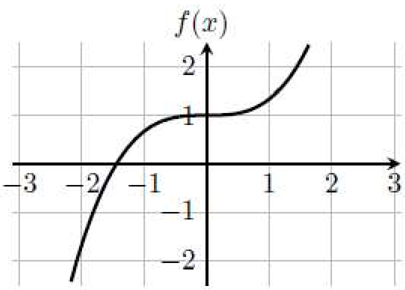

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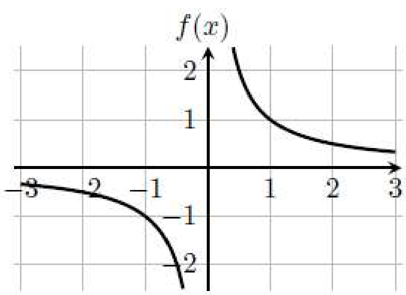

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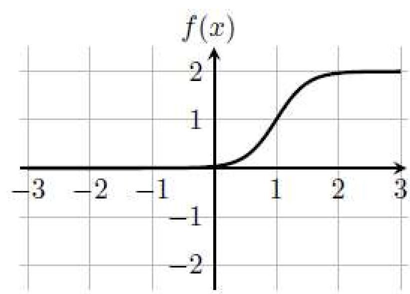

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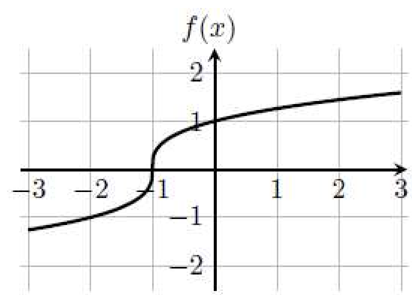

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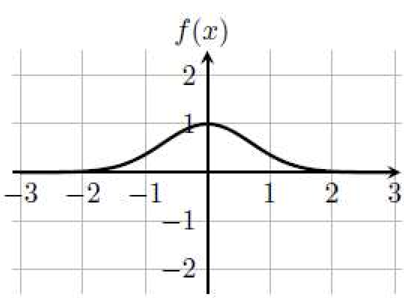

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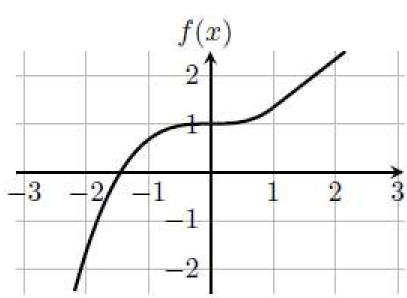

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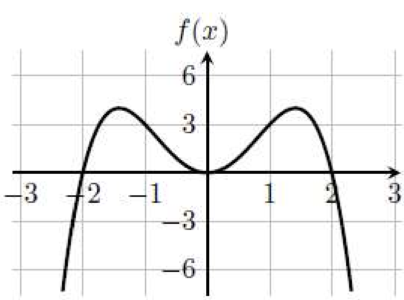

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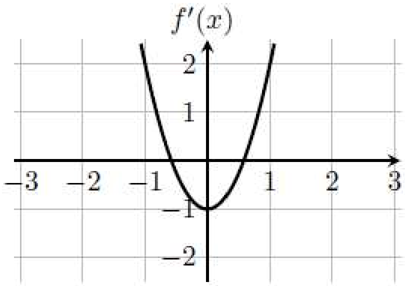

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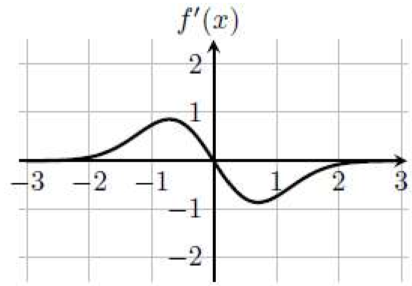

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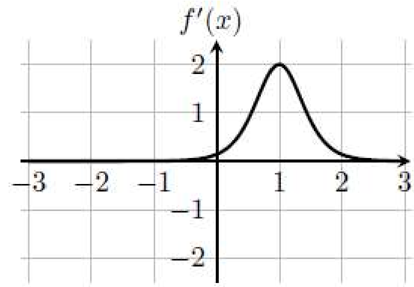

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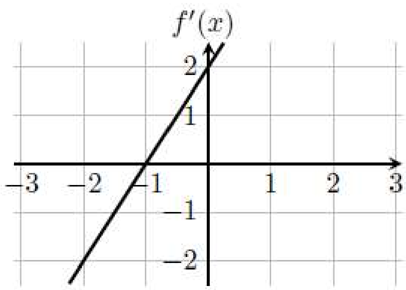

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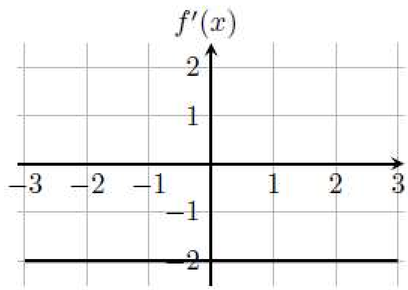

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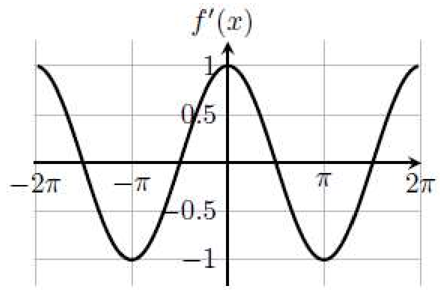

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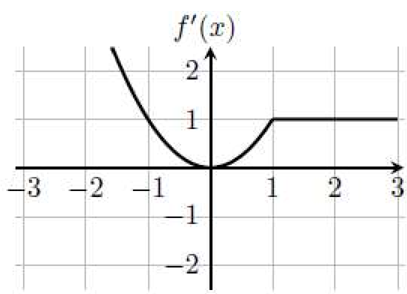

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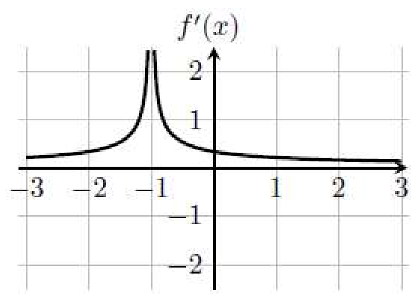

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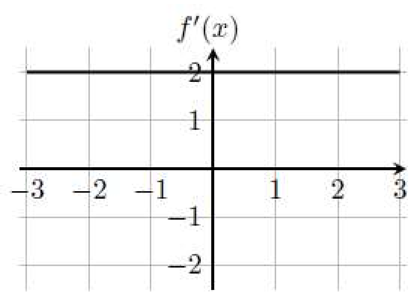

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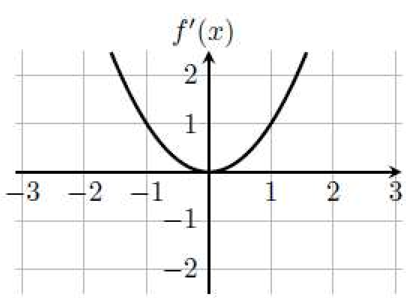

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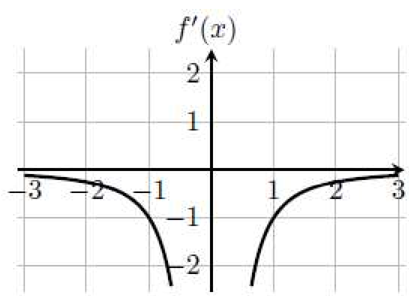

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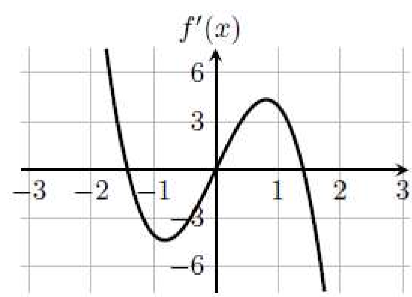

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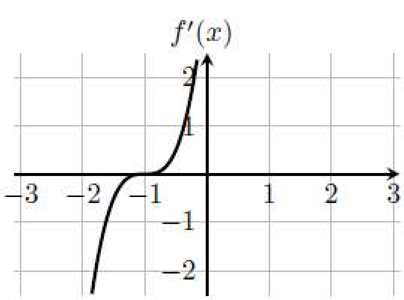

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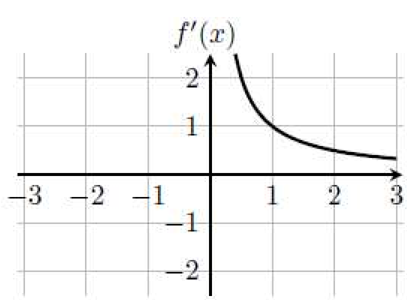

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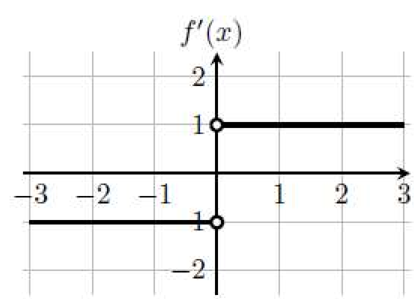


O

$f'''(x)$ switches signs at $x = -1$.

@

$f(x)$ is always concave down because $f'(x)$ is always decreasing.

□

$f(x)$ has an inflection point at $x = 1$ because $f''(x)$ switches signs at $x = 1$.

?

$f(x)$ has a vertical tangent line at $x = -1$.

!

$$\int_0^2 f'(x)\, dx = 0.$$

⇒

$f''(x)$ is undefined at $x = 1$.

♡

$f(x)$ has a local minimum at $x = -1$ because $f'(x)$ switches signs from negative to positive there. $f''(x)$ is constant.

△

$f(x)$ and $f'(x)$ are both periodic with period 2π.

∞

$f'(x)$ has a jump discontinuity at $x = 0$.

=

$f'(x) < 0$ and $f''(x) = 0$ everywhere.

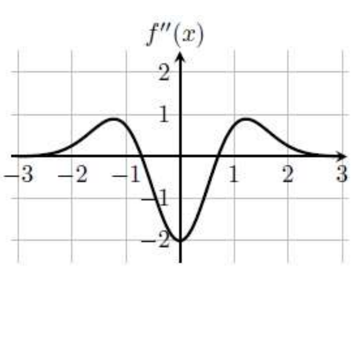
⋆

$f(x) = x^3 - x$.

&

$f'(x) > 0$ and $f''(x) = 0$ everywhere.

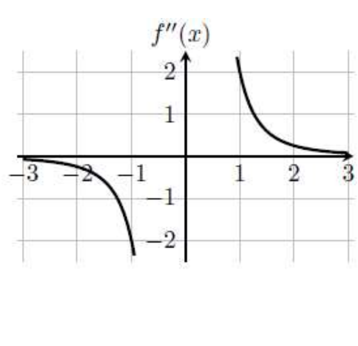
÷



+

$f'(0) = f''(0) = 0$ and $f''(x)$ exists everywhere.

#



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Solutions Table:

Function	Derivative	Description