

Precalculus

The inequality $a^x \geq A$, part 2.

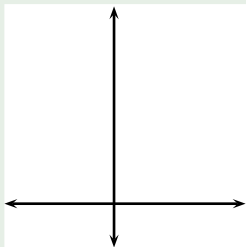
Todor Milev

2019

Example

Solve the inequality.

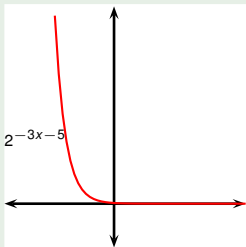
$$2^{-3x-5} < 7$$



Example

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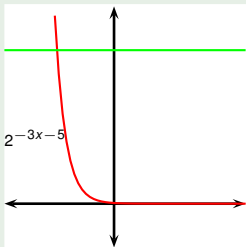
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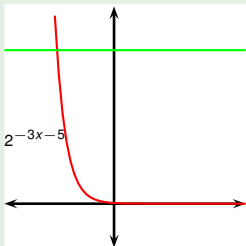
Example

Solve the inequality.

$$2^{-3x-5} < 7$$

$$\log_2 2^{-3x-5} < \log_2 7$$

Logarithms preserve
inequalities: apply \log_2



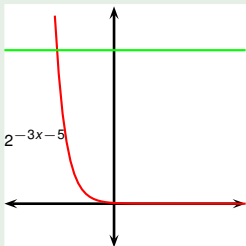
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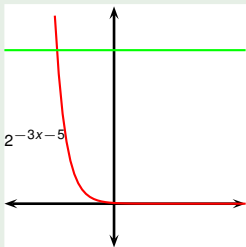
Example

Solve the inequality.

$$2^{-3x-5} < 7$$

$$\log_2 2^{-3x-5} < \log_2 7$$
$$-3x - 5 < \log_2 7$$

Logarithms preserve
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Example

Solve the inequality.

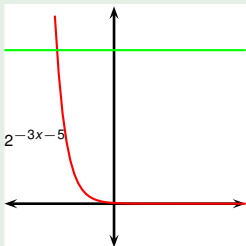
$$2^{-3x-5} < 7$$

$$\log_2 2^{-3x-5} < \log_2 7$$

$$-3x - 5 < \log_2 7$$

$$-3x < \log_2 7 + 5$$

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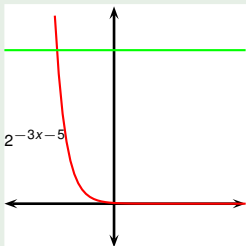
$$-3x - 5 < \log_2 7$$

$$-3x < \log_2 7 + 5$$

$$x > -\frac{\log_2 7 + 5}{3}$$

Logarithms preserve inequalities: apply \log_2

Division by negative number flips inequalities



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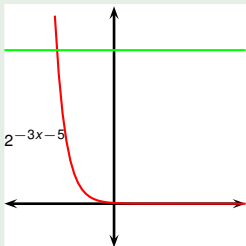
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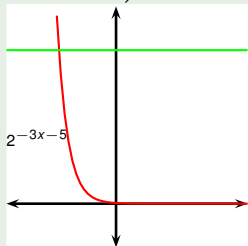
$$-3x < \log_2 7 + 5$$

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$$x \in \left(-\frac{5 + \log_2 7}{3}, \infty \right)$$

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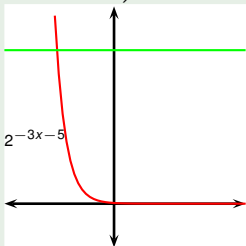
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