

חקירת פונקציה

1. מצא את המקסימום ואת המינימום של הפונקציות הבאות בקטעים הבאים:

$f(x) = x^2 - 4x + 6; [-3,10]$.2 $f(x) = 2^x; [-1,5]$.1

$f(x) = \sqrt{5-4x}; [-1,1]$.4 $f(x) = |x^2 - 3x + 2|; [-10,10]$.3

2. חקור את הפונקציות הבאות ושרטט את הגרפים שלהן:

$y = \frac{2}{x^2 + 4x + 3}$.4 $y = x + \ln(x^2 - 1)$.3 $y = \frac{x^2 - 4x + 3}{x - 2}$.2 $y = \frac{2x^2 - x - 1}{2x + 2}$.1

$y = \ln(1 + e^x)$.11 $y = \ln(1 + e^{-x})$.10 $y = \frac{x^3}{x^2 + 1}$.6 $y = \frac{x^3}{9x + 18}$.5

$y = xe^{-x}$.16 $y = \frac{x}{\ln x}$.15 $y = \frac{\ln x^2}{\sqrt{x}}$.14 $y = \frac{\ln 2x}{x^2}$.13 $y = \frac{\ln x}{x}$.12

$y = \frac{e^x + e^{-x}}{e^x - e^{-x}}$.20 $y = \frac{e^x - e^{-x}}{e^x + e^{-x}}$.19 $y = \frac{1}{2}(e^x + e^{-x})$.18 $y = \frac{1}{2}(e^x - e^{-x})$.17

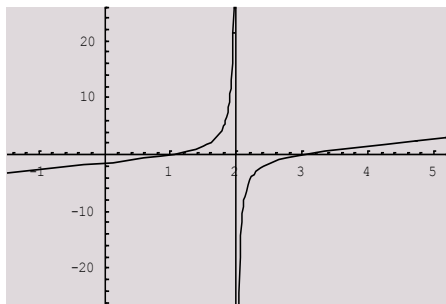
תשובות:

1. מקסימום ומינימום:

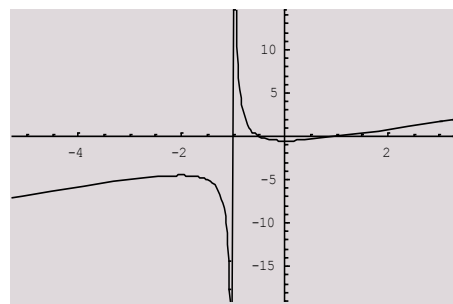
$\max_{[-3,10]} f(x) = 66, \min_{[-3,10]} f(x) = 2$.2 $\max_{[-1,5]} f(x) = 32, \min_{[-1,5]} f(x) = 0.5$.1

$\max_{[-1,1]} f(x) = 3, \min_{[-1,1]} f(x) = 1$.4 $\max_{[-10,10]} f(x) = 132, \min_{[-10,10]} f(x) = 0$.3

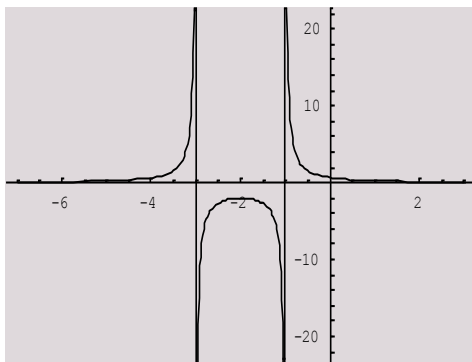
2. גרפים של פונקציות:



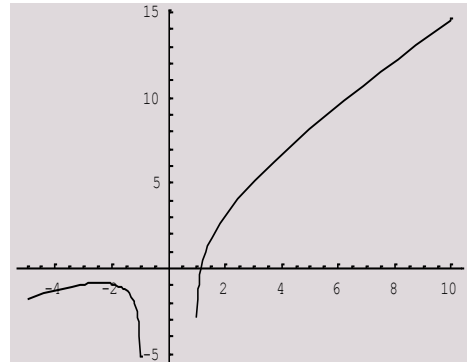
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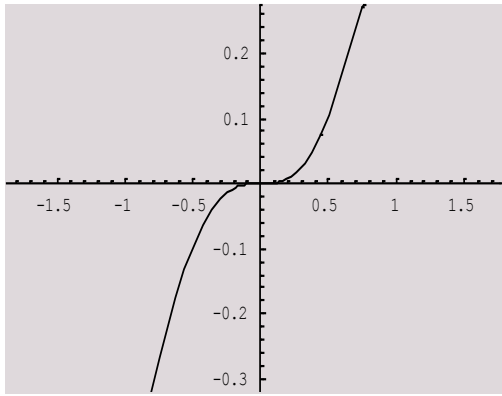
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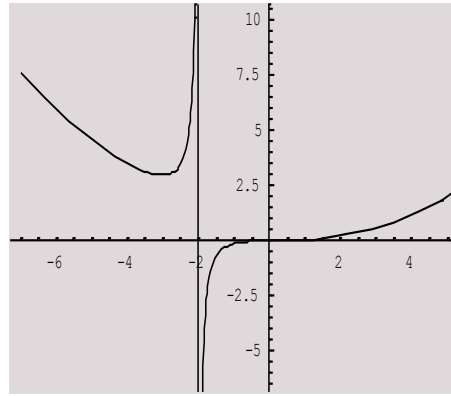
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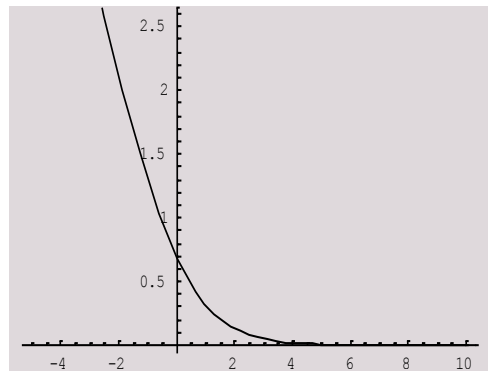
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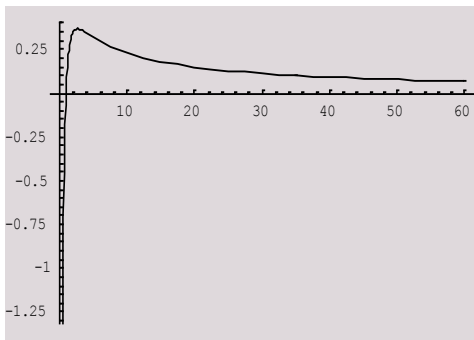
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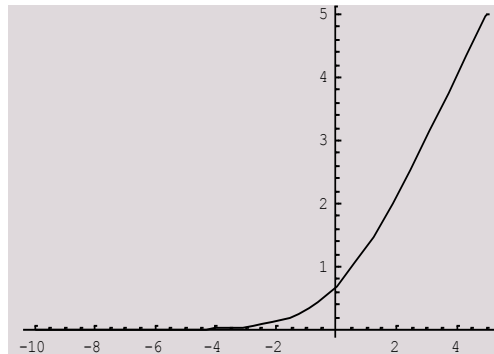
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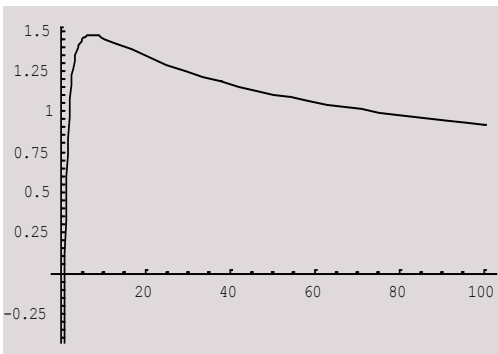
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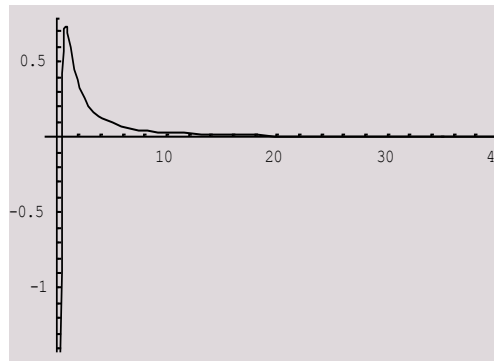
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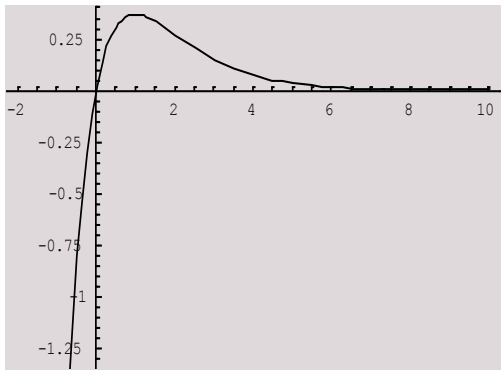
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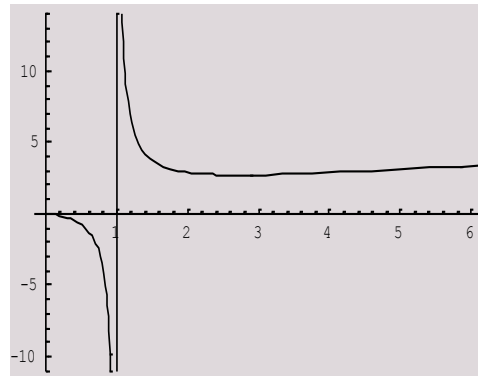
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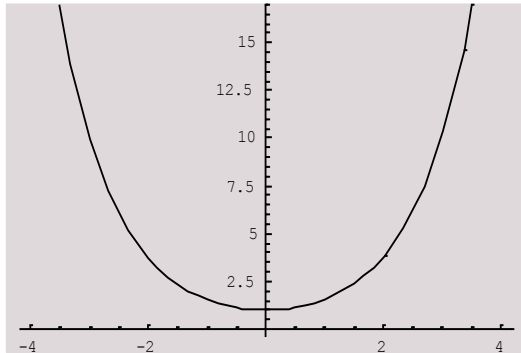
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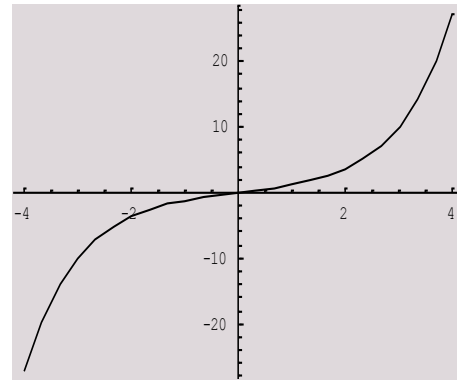
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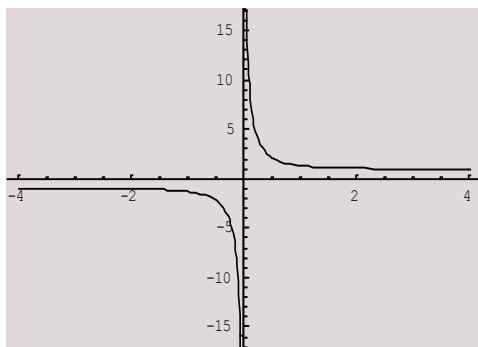
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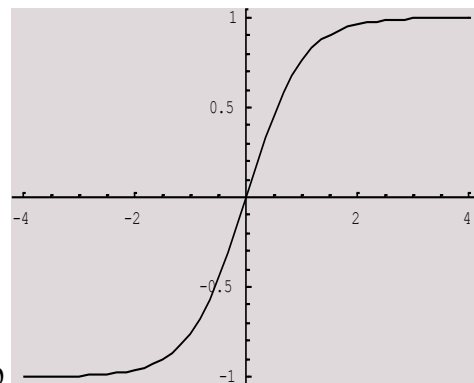
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