



AI Update

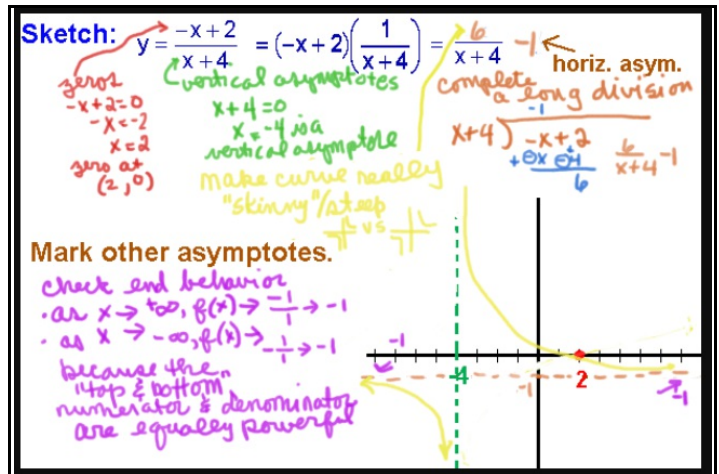
4:49 AM 10/1/2025

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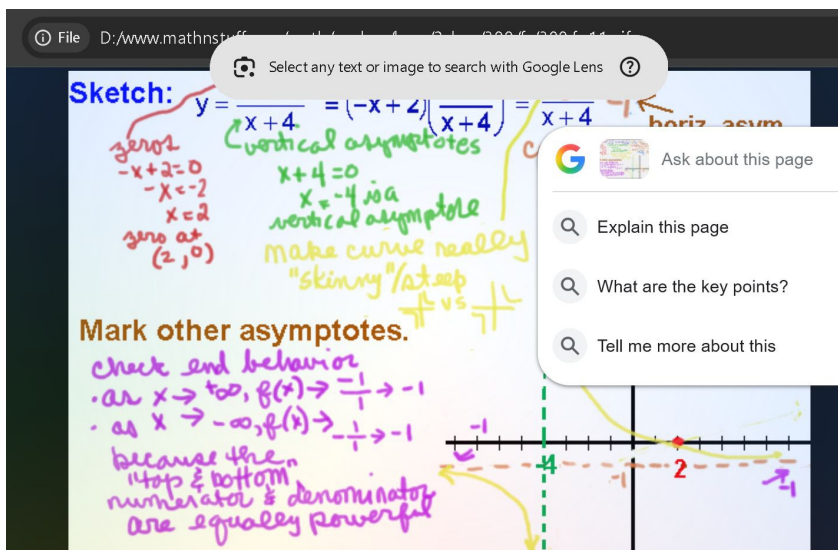
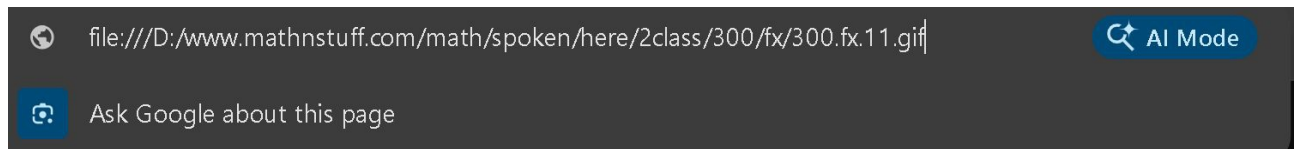
Image to Text & Then Some

ON MY DESKTOP, not on the web, I was editing today's precalc page, wished to move this image, and clicked on the image to obtain its url.

The url was in its normal location but so was the "AI Mode" image. Windows had uploaded a new version overnight.



I have been escaping the Chrome messages which have been appearing in the url location, but, the message "Ask Google about this page" was about an image. I could not resist.



I was amazed and again could not resist the temptation to explore.

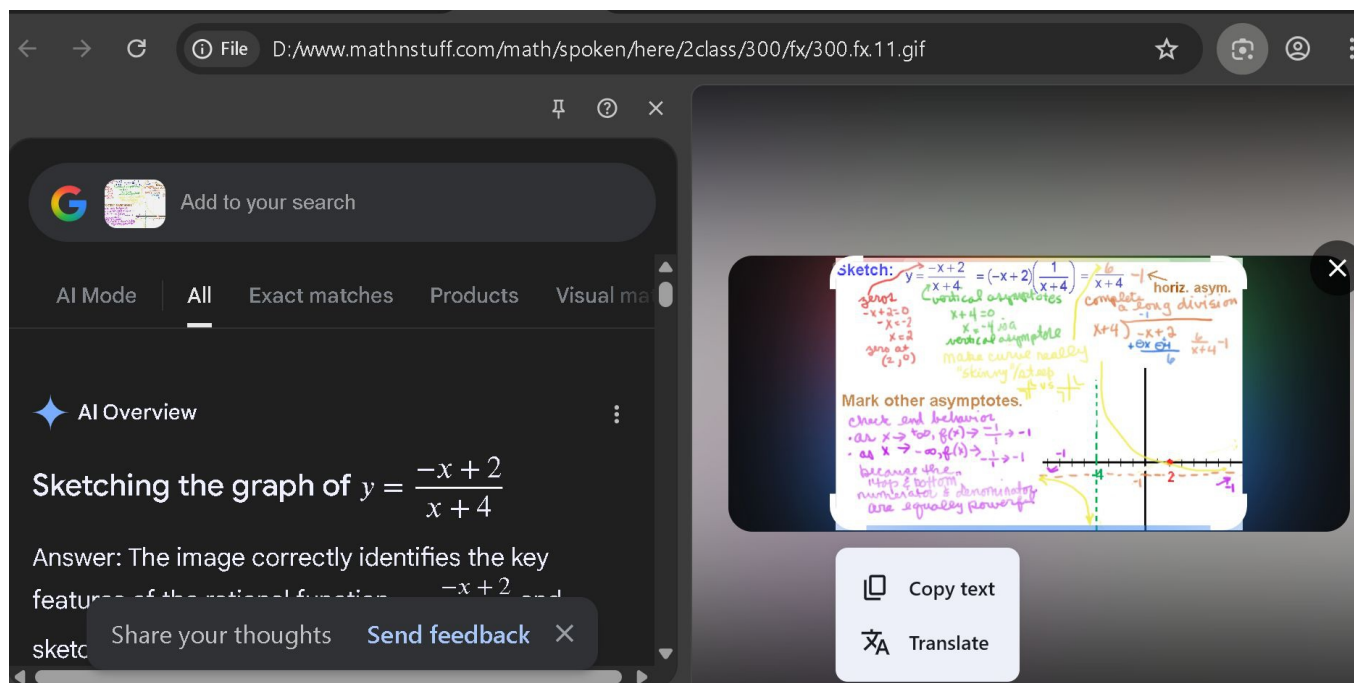
"Explain this page"

"What are the key points?"

"Tell me more about this"

I was floored. Could AI now do these things? Instantly? AI/Chrome/Google delivered.

It offered: "AI Overview, text of the the title and the offers of "Copy text" and "Translate."



I was floored simply by the fact that it had taken the image's text and correctly translated it into text! I asked for text and pasted the text file here.

```

SEPTMBER 2025. • OCTOBER.2025.txt • p.9.htm Sketch
File Edit View
Sketch:
y = (- x + 2)/(x + 4) = (- x + 2)(1/(x + 4)) = x/(x + 4) - 1 <
x + 2 = 0
x = - 2
x = 2
zers at (20)
x + 4 = 0
x = - 4 + 0a asymptore
make curve really "skinny "/stsep
. asym.
a long division
x+4) - x + 2
6
6/(x + 4) - 1
Mark other asymptotes.
Check end behavior
arx too, f(x)→→
-(1)-1
because then
top & bottom
numerator & denominatoz Hom denominate
are equally powerful
2

```

Sketch:
 $y = (-x + 2)/(x + 4) = (-x + 2)(1/(x + 4)) = x/(x + 4) - 1 <$
 $x + 2 = 0$
 $x = - 2$
 $x = 2$
 zers at (20)
 $x + 4 = 0$
 $x = - 4 + 0a$ asymptore
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 are equally powerful
 2

Not perfect, but, NOT BAD!

I selected and pasted the text to a Notepad file and received and noted:

=====5:56 AM 10/1/2025 ===== source after select & paste ==

AI Overview Sketching the graph of $(y=\frac{-x+2}{x+4})$

Answer: The image correctly identifies the key features of the rational function $(y=\frac{-x+2}{x+4})$ and sketches its graph.

.rPeykc.rWIipd{font-size:var(--m3t5);font-weight:500;line-height:var(--m3t6);margin:24px 0 10px 0;}.f5cPye .WaaZC:first-of-type

.rPeykc.uP58nb:first-child{font-size:var(--m3t3);line-height:var(--m3t4);font-weight:400 !important;letter-spacing:normal;margin:0 0 10px

0}.rPeykc.uP58nb{font-size:var(--m3t5);font-weight:500;line-height:var(--m3t6);margin:20px 0 10px

0}.rPeykc.uP58nb.MNX06c{font-size:var(--m3t1);font-weight:normal;letter-spacing:normal;line-height:var(--m3t2);margin:10px 0 10px 0}.f5cPye

ul{font-size:var(--m3t7);line-height:var(--m3t8);margin:10px 0 20px

0;padding-inline-start:24px;}.f5cPye .WaaZC:first-of-type

ul:first-child{margin-top:0}.f5cPye

ul.qh1nvc{font-size:var(--m3t7);line-height:var(--m3t8)}.f5cPye

li{padding-left:4px;margin-bottom:8px;list-style:inherit}.f5cPye

li.K3KsMc{list-style-type:none}.f5cPye ul>li:last-child,.f5cPye

ol>li:last-child,.f5cPye ul>.bsmXxe:last-child>li,.f5cPye

ol>.bsmXxe:last-child>li{margin-bottom:0} Explanation The image demonstrates the correct steps for

=====

This I then could edit to:

AI Overview

Sketching the graph of $(y=\frac{-x+2}{x+4})$

Answer: The image correctly identifies the key features of the rational function $(y=\frac{-x+2}{x+4})$ and sketches its graph.

Explanation

The image demonstrates the correct steps for sketching the graph of the rational function $(y=\frac{-x+2}{x+4})$.

Vertical Asymptote: The vertical asymptote is found by setting the denominator equal to zero. $(x+4=0)$ $(x=-4)$

The graph shows a dashed vertical line at $(x=-4)$.

Horizontal Asymptote: The horizontal asymptote is determined by comparing the degrees

of the numerator and denominator. Since the degrees are equal (both are 1), the horizontal asymptote is the ratio of the leading coefficients. $(y = \frac{-1}{1} = -1)$

The graph shows a dashed horizontal line at $(y = -1)$.

Zeros (x-intercepts): The zeros are found by setting the numerator equal to zero.
 $(-x + 2 = 0)$ $(-x = -2)$ $(x = 2)$

The graph correctly shows an x-intercept at the point $(2, 0)$.

End Behavior: The end behavior of the function confirms the horizontal asymptote.

As (x) approaches positive or negative infinity, the function $(f(x))$ approaches (-1) .

This is because the degrees of the numerator and denominator are equal, so the function's value approaches the ratio of the leading coefficients.

Pre-Calculus - Rational Graphs - Asymptotes and Intercepts

(part 2 ...Nov 14, 2011 — Pre-Calculus - Rational Graphs -

Asymptotes and Intercepts (part 2) - YouTube.

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Horizontal Asymptotes Examples Part 4 - YouTube. This content isn't available. In this

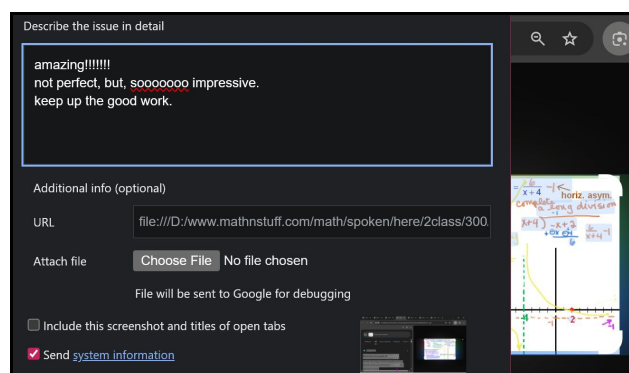
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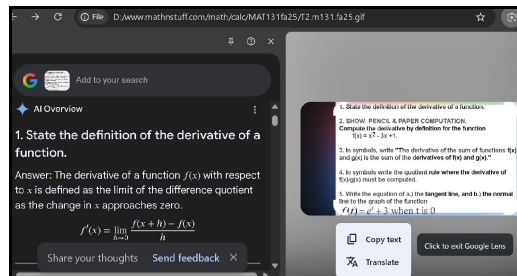
2017 — / @mathematicstutor · How Many ...

On exit, I got and replied.



Tomorrow afternoon I will post a calc I test on which the questions are posted in an image so as to decrease ease of finding an answer on the web. I did an AI assist on the image and got **ALL THE QUESTIONS AND ANSWERS** and **additional reference material**. Question 5 is shown.

1. State the definition of the derivative of a function.
2. SHOW PENCIL & PAPER COMPUTATION. Compute the derivative by definition for the function $f(x) = x^2 - 3x + 1$.
3. In symbols, write "The derivative of the sum of functions $f(x)$ and $g(x)$ is the sum of the derivatives of $f(x)$ and $g(x)$."
4. In symbols write the quotient rule where the derivative of $f(x)/g(x)$ must be computed.
5. Write the equation of a.) the tangent line, and b.) the normal line to the graph of the function $f(t) = e^t + 3$ when t is 0
6. SHOW PENCIL & PAPER COMPUTATION. Compute the derivative. $y = e^x (\ln(x))$
7. Show work, circle answer to: Find the x -values where the graph of the function has a horizontal tangent line. $f(x) = x \sin x$ on $[-1, 1]$



5. Write the equation of a.) the tangent line, and b.) the normal line to the graph of the function $f(t) = e^t + 3$ when t is 0.

Step 1: Find the function value and the derivative at $t = 0$.

$$f(t) = e^t + 3$$

$$f(0) = e^0 + 3 = 1 + 3 = 4$$

The point is $(0, 4)$.

The derivative is $f'(t) = e^t$.

The slope of the tangent line at $t = 0$ is $m_{tan} = f'(0) = e^0 = 1$.

Step 2: Find the equation of the tangent line.

Using the point-slope form $y - y_1 = m(x - x_1)$:

$$y - 4 = 1(t - 0)$$

$$y = t + 4$$

Questions to Ponder

1. How much of the use of this exceptional research/studying tool do I share with my students?
2. Will this tool change WHAT I teach in addition to the way I teach?
3. Already I use writing to learn "create your own" quizzes. In what ways will this tool change what I test?

Student Input

- * Do you feel I should be teaching you this also?
Unanimous yes
- * Do you feel I should also be teaching you paper and pencil?
Yes, but, fewer responses
- * I've not had time to transcribe the students' comments. I thought it more important to share today's findings w/you. — Stay safe, a^2