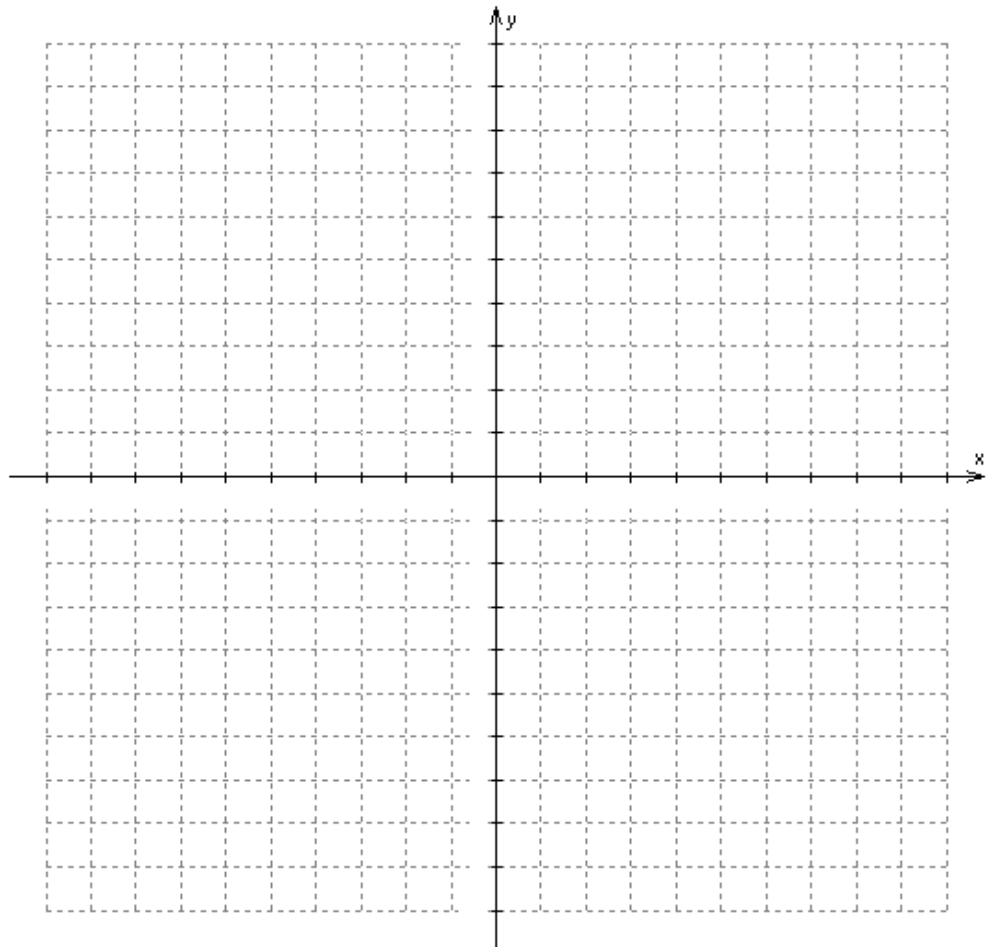


1) Complete the following table.

- ALL VALUES SHOULD BE EXACT!
- NO ROUGH WORK WILL BE MARKED FOR THIS QUESTION!
- DO NOT LEAVE ANY BOXES BLANK! WRITE "NONE" IF APPLICABLE.

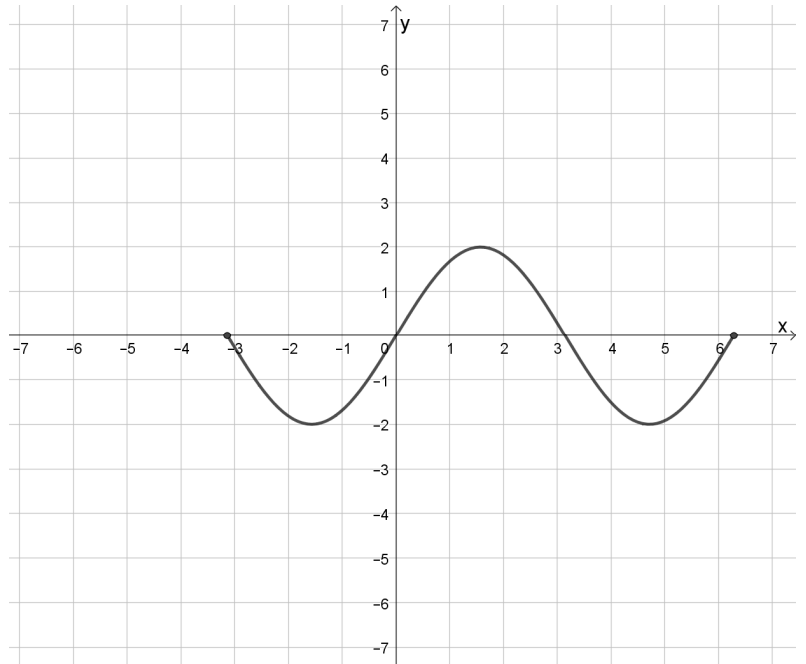
Function	$y = \frac{(x-3)(x+2)}{(x-1)(x+3)(x-4)}$	$y = \frac{2x^2+7}{x^2-3x-10}$	$y = \frac{x^2+x-12}{x-2}$	$y = \frac{x^2-9}{x+3}$
Domain			$\{x \in \mathbb{R} \mid x \neq 2\}$	
Zeros				
y – intercept				
Vertical Asymptotes				
Horizontal Asymptote				NONE
Linear Oblique Asymptote				NONE
Holes	NONE			

- 2) Sketch the graph of the function $y = \frac{x^2 - 4}{x^2 - 1}$ on the axes below. Be sure to show all work leading to your sketch and clearly show all intercepts and asymptotes on your graph. Don't forget to include scales on the axes.



- 3) A section of the graph of a function $y = f(x)$ is shown on the right.

Sketch the graph of $y = \frac{1}{f(x)}$ on the same interval.



- 4) Adam purchased a shipment of Casio calculators for \$3082.50. He kept 15 calculators to give as Christmas presents for his closest friends and sold the remaining calculators for \$3751.50, making a profit of \$8.25 on each calculator that he sold. Determine the number of calculators in the original shipment.

5) Solve $\frac{x+3}{x-5} = 5 + \frac{10}{x+1}$.

6) Solve $\frac{x+3}{x+1} \geq \frac{x-2}{x-3}$. State your answers in exact form (don't approximate).

7) Jarred can install 5 windows in t minutes. In triple the amount of time, Michelle can install 4 times as many windows. Working together, they can install 22 windows in 352 minutes. How long does it take Jarred to install one window? Round your final answer to the nearest tenth of a minute.

8) Consider the functions $f(x) = \frac{x^2 - 6x + 8}{x^3 - 9x^2 + 26x - 24}$ and $g(x) = \frac{x^2 - 6x + 8}{x^3 - 9x^2 + 26x - 24} + 5$.

a) Janine claims that $f(x)$ and $g(x)$ both have the same horizontal asymptote. Is Janine's claim correct? Explain.

b) Janine's friend, Pedro, correctly rewrote the functions $f(x)$ and $g(x)$ as follows:

$$f(x) = \frac{(x-2)(x-4)}{(x-3)(x-2)(x-4)} \qquad g(x) = \frac{(x-2)(x-4)}{(x-3)(x-2)(x-4)} + 5$$

Will the holes in the graph of $f(x)$ occur at the same x -values as the holes in the graph of $g(x)$?

Yes

No

(check one)

c) Choose **ONE** of the following. If more space is needed, use the back of this page.

i) Sketch a clearly labeled graph of $y = f(x)$.

ii) Determine, to the nearest hundredth, the instantaneous rate of change of $f(x)$ at $x = 5$.

