

King Fahd University of Petroleum and Minerals
Faculty of Science – Prep-Year Math Program
Math 001 - Term 032
Recitation Hour (3.5 & 4.1)

Question1

Find all asymptotes for the graph of the function $F(x) = \frac{x^3 + 1}{x^2 - 1}$.

Question2

If $y = -2$ is the horizontal asymptote for the graph of $F(x) = \frac{Ax^2 + x + 2}{2x^2 - x - 1}$, then

- a) find the value of A
- b) find the vertical asymptote(s)

Question3

Sketch the graph of the rational function $F(x) = \frac{x}{9 - x^2}$.

Question4

If $f(x) = x^2 + 6x - 6, x \geq -3$, then

- a) find $f^{-1}(x)$
- b) state the domain and the range of both $f(x)$ and $f^{-1}(x)$

Question5

If $f(x) = \frac{2x + 1}{x - 3}$, then

- a) find $f^{-1}(x)$
- b) Determine the vertical and horizontal asymptotes for the graphs of $f(x)$ and $f^{-1}(x)$. What do you notice?