Key

Review: Reciprocal Functions

1. Identify the equation(s) of the vertical asymptote(s) for the reciprocal of the quadratic function $y = (x-2)^2 + 4$

2. State restrictions for the expression: $\dfrac{1}{x^2+x-6}$.

    $(x+3)(x-2)$

    $x \neq -3, 2$

3. Give the domain of the function for each of the following:

    a) $y = \dfrac{1}{(x-2)(x-3)}$

    $x \neq 2, 3$

    b) $y = \dfrac{1}{2x-5}$

    $x \neq \dfrac{5}{2}$

4. Given: $y = \dfrac{1}{(x-3)^2}$:

    a) Determine the y-intercept.

    $\dfrac{1}{9}$

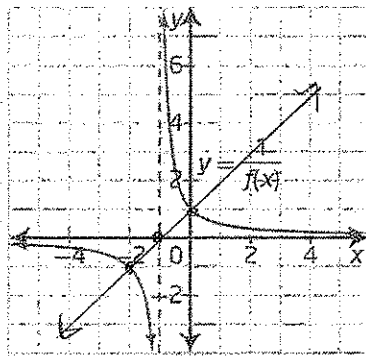   b) Determine the x-intercept.

    no x-int

5. State the equation(s) of the vertical asymptote(s) for the function:
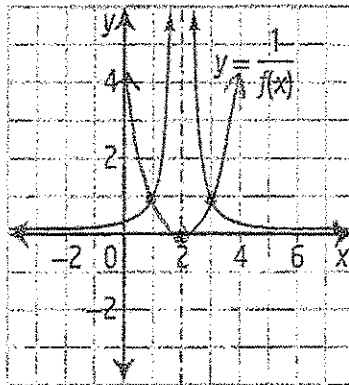$$f(x) = \frac{1}{x^2 - 16}$$

$$X = \pm 4$$

6. Given the graph of $y = \frac{1}{f(x)}$, graph $y = f(x)$

a)

b)

7. Explain how the zeros of the function $f(x) = (x + 4)(x - 3)$ are related to the non-permissible values of the reciprocal function $y = \frac{1}{(x+4)(x-3)}$.

They are the same values.