Practice worksheet | Functions and graph sketching

Reciprocal/composite transformations

Name: _____ Date: _____

6 questions | 19 marks

1. For $f(x) = x^2 - 1$, identify vertical asymptotes, intercepts and the stationary point of $\frac{1}{f(x)}$. [4 marks]

2. Find the range and asymptote of $y = \frac{1}{x^2 + 1}$. [3 marks]

3. Which points on a graph $y = f(x)$ remain fixed when changing to $y = \frac{1}{f(x)}$? [3 marks]

4. For $g(x) = \frac{2}{x-1} + 3$, state its asymptotes, intercepts and centre of symmetry. [4 marks]

5. Find the domain of $y = \frac{1}{\sqrt{x}}$ and explain the endpoint. [3 marks]

6. If $f(a) = -4$, find the corresponding ordinate on $y = \frac{1}{f(x)}$. Does its sign change? [2 marks]