



Essential Question:

What are the properties of the reciprocal function?

Questions:

Notes:

WHAT IS A RECIPROCAL

- ex $\frac{4}{3}$ the reciprocal is $\frac{3}{4}$

def) THE RECIPROCAL OF A NUMBER IS 1 DIVIDED BY THE NUMBER.

- 4 is $\frac{1}{4}$
- $\frac{5}{6}$ is $\frac{6}{5}$

- x^{-1} is the reciprocal of x

$$\frac{1}{x}$$

* WHEN YOU MULTIPLY A NUMBER BY ITS RECIPROCAL, THE PRODUCT IS

$$4 \cdot \frac{1}{4} = \frac{4}{4} = 1$$

5.2 THE RECIPROCAL FUNCTION

$$f(x) = \frac{k}{x}, \text{ where } k \text{ is constant}$$

DO INVESTIGATION p. 143

Questions:

Notes:

* PROPERTIES

- NEVER TOUCHES ORIGIN

- y-axis IS VERTICAL ASYMPTOTE
 $x=0$

- x-axis IS HORIZONTAL ASYMPTOTE
 $y=0$

- DOMAIN $\{x \mid x \neq 0\}$

- RANGE $\{y \mid y \neq 0\}$

- the two parts of the graph are reflections of each other

- $y=x$ and $y=-x$ are both lines of symmetry

- it is its own inverse.