

Finding Reciprocals

1. Find the reciprocal of x in each case, writing your answers in any valid simplified form.

$$x = 17 \quad \Rightarrow \quad \frac{1}{x} = \frac{1}{17} \quad \Bigg| \quad x = 8\frac{1}{2} \quad \Rightarrow \quad \frac{1}{x} =$$

$$x = -12 \quad \Rightarrow \quad \frac{1}{x} = \quad \Bigg| \quad x = 2\frac{11}{15} \quad \Rightarrow \quad \frac{1}{x} =$$

$$x = 3.5 \quad \Rightarrow \quad \frac{1}{x} = \quad \Bigg| \quad x = \frac{1}{3} + \frac{1}{4} \quad \Rightarrow \quad \frac{1}{x} =$$

$$x = -0.2 \quad \Rightarrow \quad \frac{1}{x} = \quad \Bigg| \quad x = 1 \quad \Rightarrow \quad \frac{1}{x} =$$

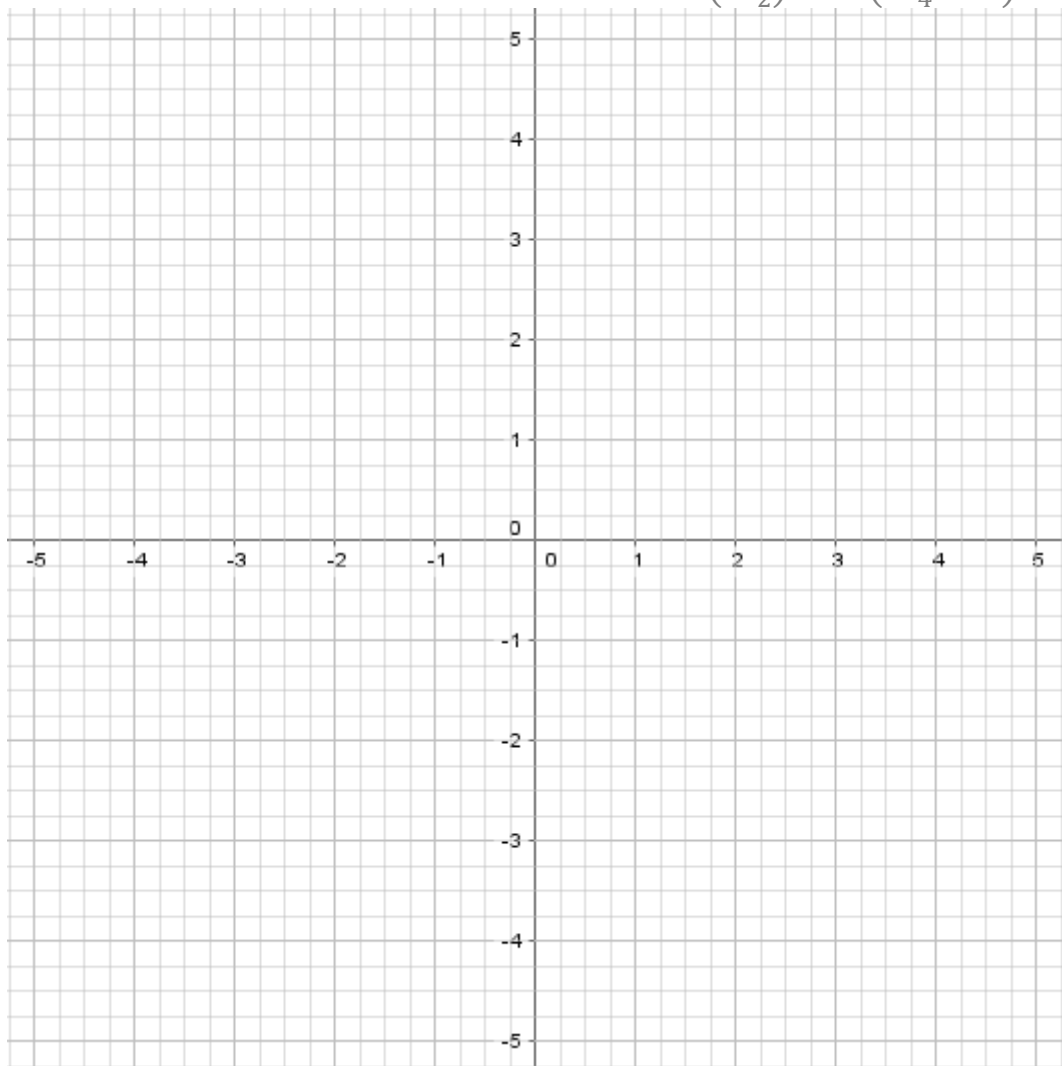
$$x = 12.37 \quad \Rightarrow \quad \frac{1}{x} = \quad \Bigg| \quad x = -1 \quad \Rightarrow \quad \frac{1}{x} =$$

$$x = \frac{13}{16} \quad \Rightarrow \quad \frac{1}{x} = \quad \Bigg| \quad x = 0 \quad \Rightarrow \quad \frac{1}{x} =$$

2. The reciprocal of my number is the same as half of my number. Find my number.

3. Draw the graph of $y = \frac{1}{x}$ on the grid below.

Hint: All coordinates (x, y) will form a reciprocal pair (eg $(2, \frac{1}{2})$ and $(-\frac{1}{4}, -4)$).



Finding Reciprocals SOLUTIONS

1. Find the reciprocal of x in each case, writing your answers in any valid simplified form.

$$x = 17$$

$$\Rightarrow \frac{1}{x} = \frac{1}{17}$$

$$x = 8\frac{1}{2}$$

$$x = \frac{17}{2} \Rightarrow \frac{1}{x} = \frac{2}{17}$$

$$x = -12$$

$$\Rightarrow \frac{1}{x} = -\frac{1}{12}$$

$$x = 2\frac{11}{15}$$

$$x = \frac{41}{15} \Rightarrow \frac{1}{x} = \frac{15}{41}$$

$$x = 3.5$$

$$x = \frac{7}{2} \Rightarrow \frac{1}{x} = \frac{2}{7}$$

$$x = \frac{1}{3} + \frac{1}{4}$$

$$x = \frac{4}{12} + \frac{3}{12} = \frac{7}{12} \Rightarrow \frac{1}{x} = \frac{12}{7}$$

$$x = -0.2$$

$$x = -\frac{1}{5} \Rightarrow \frac{1}{x} = -5$$

$$x = 1$$

$$x = \frac{1}{1} \Rightarrow \frac{1}{x} = 1$$

$$x = 12.37$$

$$x = \frac{1237}{100} \Rightarrow \frac{1}{x} = \frac{100}{1237}$$

$$x = -1$$

$$x = -\frac{1}{1} \Rightarrow \frac{1}{x} = -1$$

$$x = \frac{13}{16}$$

$$\Rightarrow \frac{1}{x} = \frac{16}{13}$$

$$x = 0$$

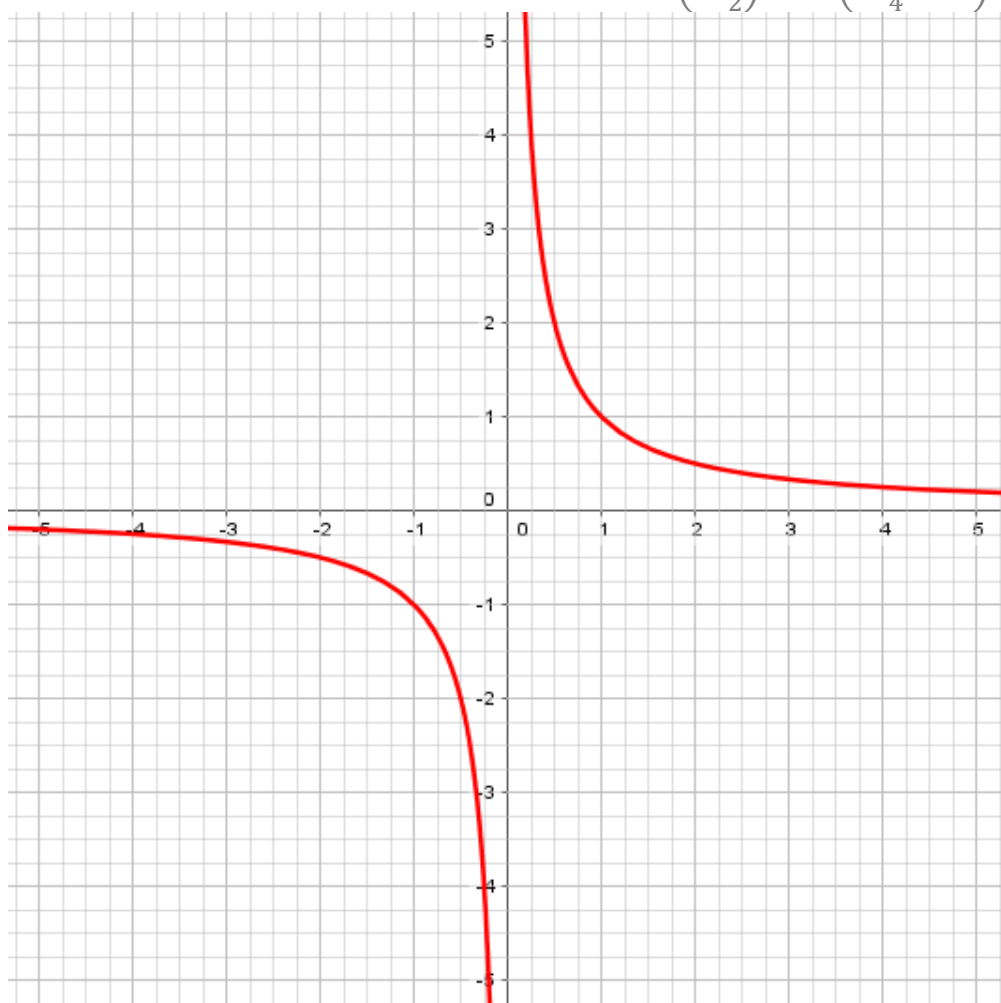
$$x = \frac{0}{1} \Rightarrow \frac{1}{x} = ?$$

2. The reciprocal of my number is the same as half of my number. Find my number.

$$\frac{1}{x} = \frac{x}{2} \Rightarrow \frac{2}{x} = x \Rightarrow 2 = x^2 \Rightarrow x = \pm\sqrt{2}$$

3. Draw the graph of $y = \frac{1}{x}$ on the grid below.

Hint: All coordinates (x, y) will form a reciprocal pair (eg $(2, \frac{1}{2})$ and $(-\frac{1}{4}, -4)$).



Note the asymptotes at $y = 0$ (the x -axis) and $x = 0$ (the y -axis).