

Recognise, draw, sketch and interpret graphs of the reciprocal function $y = \frac{1}{x}$

Miss Davies



Reciprocal Graphs

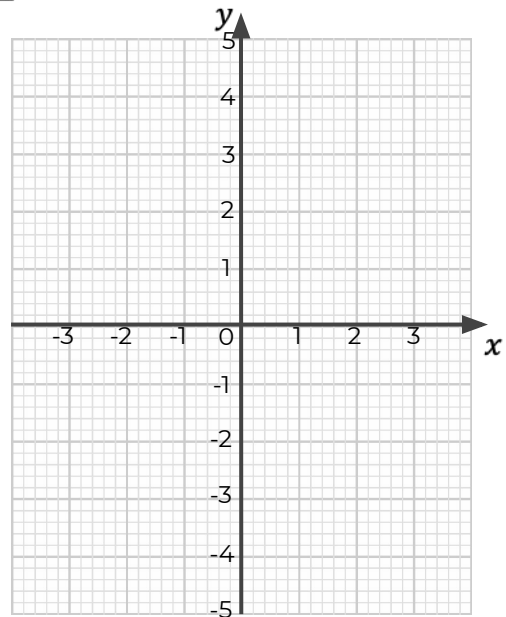
1. a) Complete the tables of values for $y = \frac{1}{x}$

	-4	-3	-2	-1	1	2	3	4

	-0.5	-0.4	-0.3	-0.2	0.2	0.3	0.4	0.5

b) Why can x not equal zero?

2. Draw the graph for $y = \frac{1}{x}$ for $x \neq 0$, $-3 \leq x \leq 3$



Reciprocal Graphs

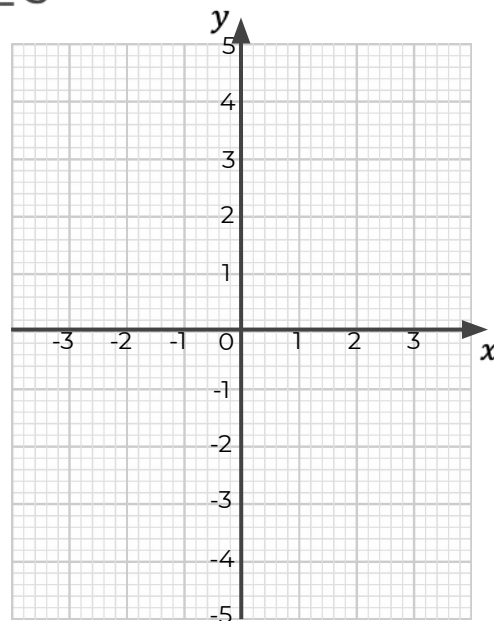
3. a) Complete the tables of values for $y = -\frac{1}{x}$

	-4	-3	-2	-1	1	2	3	4

	-0.5	-0.4	-0.3	-0.2	0.2	0.3	0.4	0.5

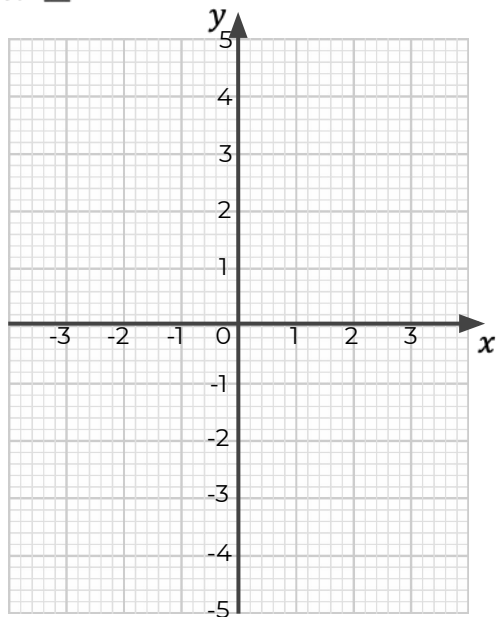
b) Predict what the graph of $y = -\frac{1}{x}$ looks like.

4. Draw the graph for $y = -\frac{1}{x}$ for $x \neq 0$, $-3 \leq x \leq 3$

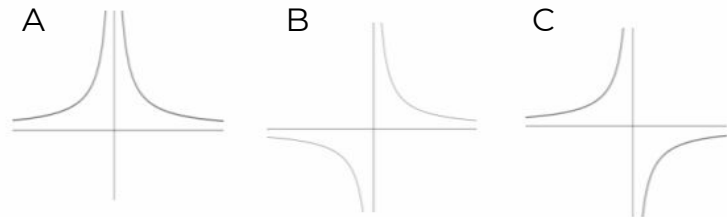


Reciprocal Graphs

5. Draw the graph for $y = \frac{2}{x}$ for $x \neq 0$,
 $-4 \leq x \leq 4$



6. Which sketch shows the graph of
 $y = \frac{4}{x}$?



7. Complete the sentences to describe
the graph of $y = \frac{1}{x}$

a) When x tends to positive infinity,
 y tends to _____.

b) When x tends to zero,
 y tends to _____.



Answers



Reciprocal Graphs

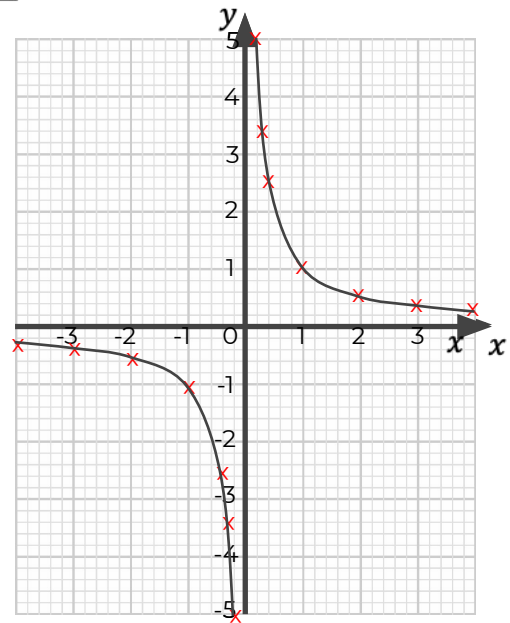
1. a) Complete the tables of values for $y = \frac{1}{x}$

	-4	-3	-2	-1	1	2	3	4
	-0.25	-0.33	-0.5	-1	1	0.5	0.33	0.25

	-0.5	-0.4	-0.3	-0.2	0.2	0.3	0.4	0.5
	-2	-2.5	-3.3	-5	5	3.3	2.5	2

b) Why can x not equal zero?

2. Draw the graph for $y = \frac{1}{x}$ for $x \neq 0$, $-3 \leq x \leq 3$



Reciprocal Graphs

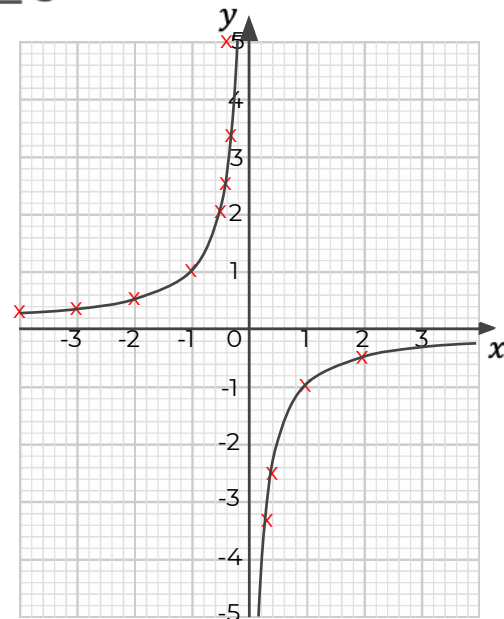
3. a) Complete the tables of values for $y = -\frac{1}{x}$

	-4	-3	-2	-1	1	2	3	4
	0.25	0.33	0.5	1	-1	-0.5	-0.33	-0.25

	-0.5	-0.4	-0.3	-0.2	0.2	0.3	0.4	0.5
	2	2.5	3.3	5	-5	-3.3	-2.5	-2

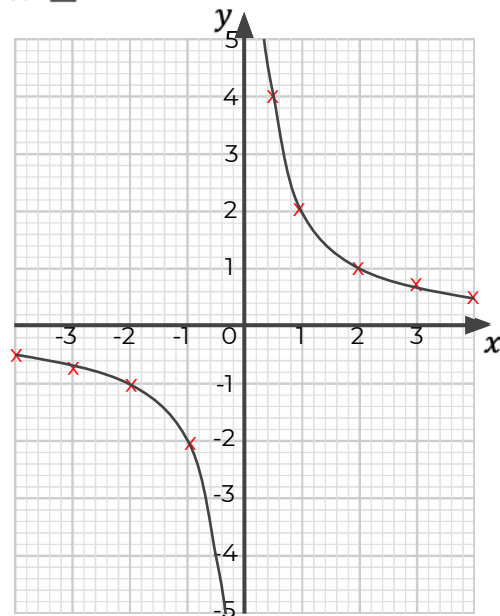
b) Predict what the graph of $y = -\frac{1}{x}$ looks like.

4. Draw the graph for $y = -\frac{1}{x}$ for $x \neq 0$, $-3 \leq x \leq 3$

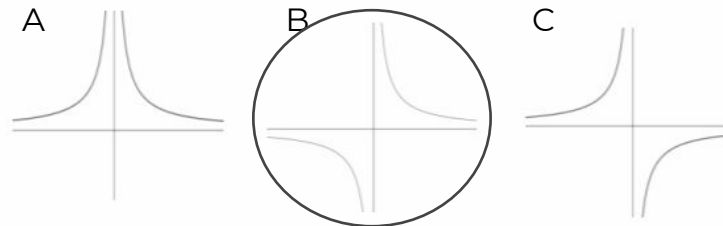


Reciprocal Graphs

5. Draw the graph for $y = \frac{2}{x}$ for $x \neq 0$, $-4 \leq x \leq 4$



6. Which sketch shows the graph for $y = \frac{4}{x}$?



7. Complete the sentences to describe the graph of $y = \frac{1}{x}$

a) When x tends to positive infinity, y tends to zero.

b) When x tends to zero, y tends to infinity.

