

GRAPHING RATIONAL ALGEBRAIC FRACTIONS

1 The asymptotes of $y = \frac{1}{x+2}$ are:

A $y = 0$ and $x = -2$

B $y = 0$ and $x = 2$

C $x = 0$ and $y = -2$

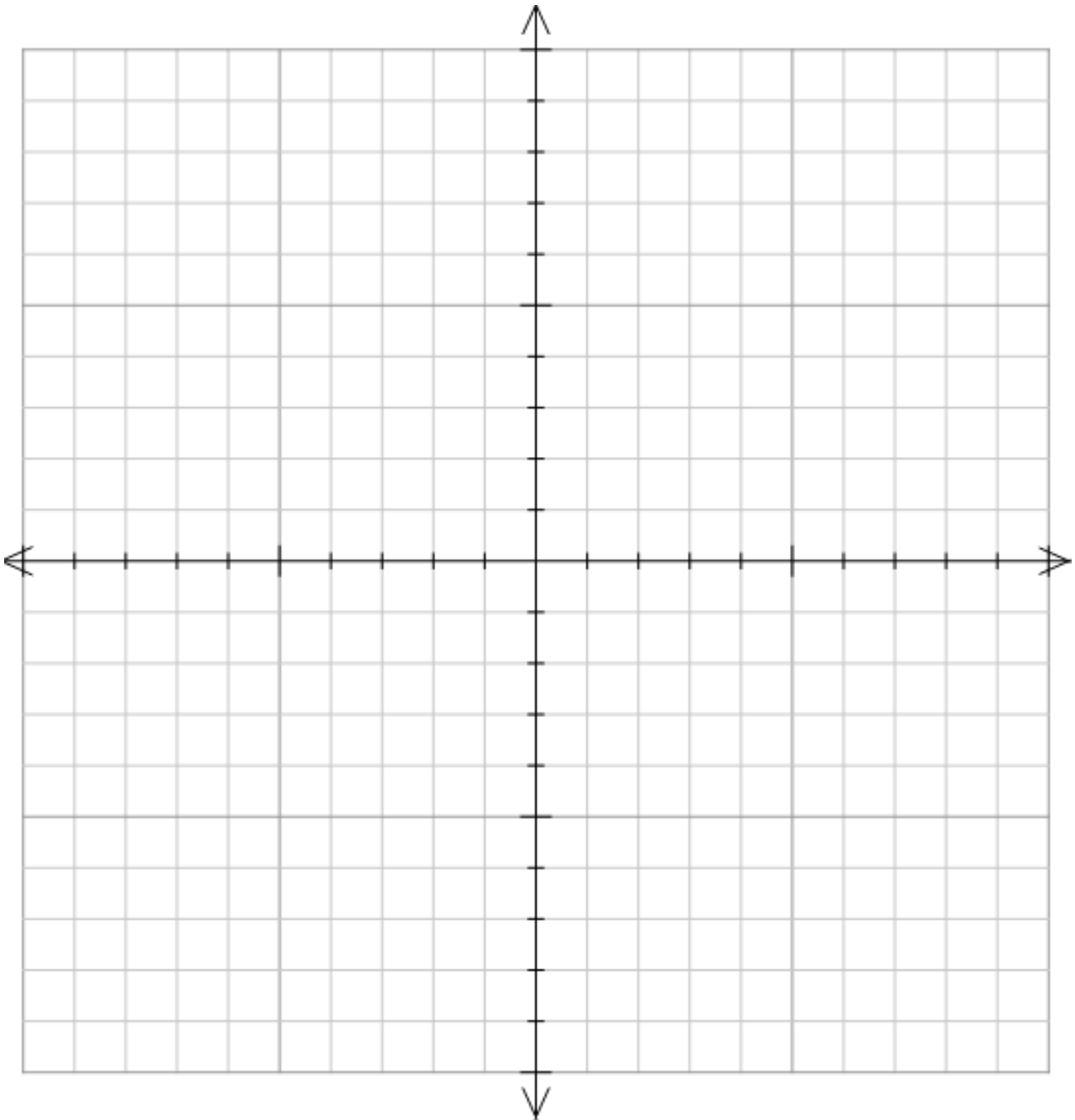
D $x = 0$ and $y = 2$

2 Sketch the graph of each function. For what values of x is the curve concave down? State the range of each function.

(a) $y = \frac{1}{x+2}$

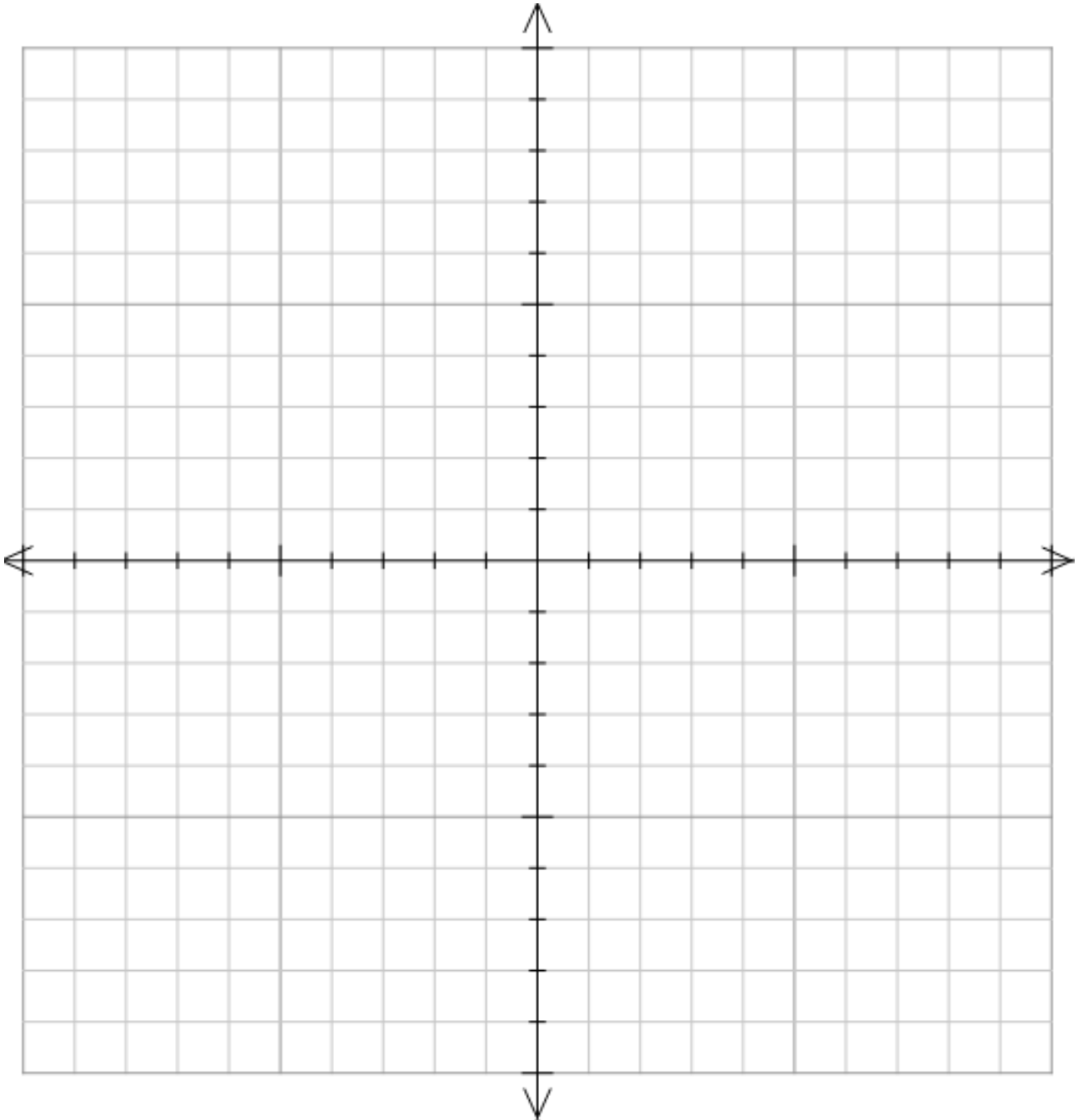
(b) $y = \frac{1}{x-1}$

(c) $y = \frac{1}{2-x}$



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- 3 (a) Show that the function $y = \frac{x-1}{x-2}$ can be written as $y = 1 + \frac{1}{x-2}$.
- (b) Hence sketch the graph of $y = \frac{x-1}{x-2}$, showing all the asymptotes.



- 5 For the function given in the sketch, state whether each statement below is correct or incorrect.

- (a) The horizontal asymptote is $y = 2$.
- (b) The curve is continuous.
- (c) The curve is concave up for $x > 0$.
- (d) The equation of the function is $y = 2 + \frac{1}{x}$.

