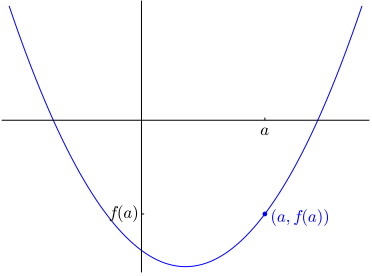
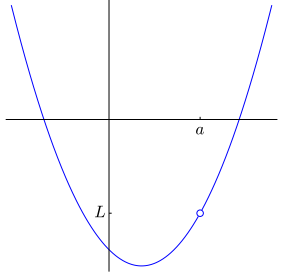
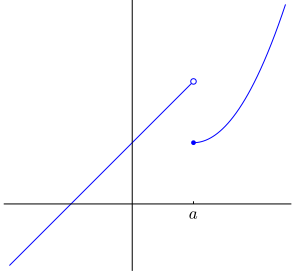
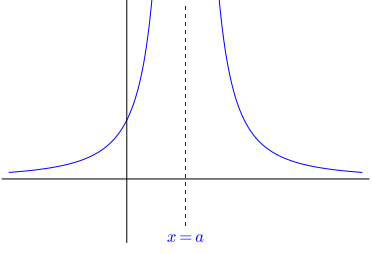
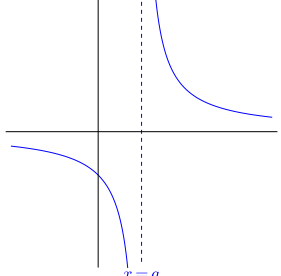


Limits

Case	Sample Graph	Technique	Answer
continuous at $x = a$	 <p>A Cartesian coordinate system showing a blue parabolic curve opening upwards. The x-axis is labeled with 'a' and the y-axis with 'f(a)'. A point on the curve is labeled '(a, f(a)'. The curve passes through the point (a, f(a)) without any breaks or jumps.</p>	direct evaluation	$\lim_{x \rightarrow a} f(x) = f(a)$
hole at $x = a$	 <p>A Cartesian coordinate system showing a blue parabolic curve opening upwards. The x-axis is labeled with 'a'. A point on the curve is marked with a small open circle, representing a hole. The y-axis is labeled with 'L', indicating the limit value.</p>	factor and cancel	$\lim_{x \rightarrow a} f(x) = L$
jump at $x = a$	 <p>A Cartesian coordinate system showing a blue curve with a jump discontinuity at $x = a$. The curve consists of two separate parts: a straight line segment ending at an open circle at $x = a$, and a curve starting at a solid dot at $x = a$ and increasing.</p>	graph or table of values	$\lim_{x \rightarrow a} f(x)$ does not exist
vertical asymptote at $x = a$	 <p>A Cartesian coordinate system showing a blue curve with a vertical asymptote at $x = a$. The curve approaches the vertical line $x = a$ from both sides, with the function values going to positive or negative infinity. The x-axis is labeled with 'x = a'.</p>	graph or table of values	$\lim_{x \rightarrow a} f(x) = \infty$
	 <p>A Cartesian coordinate system showing a blue curve with a vertical asymptote at $x = a$. The curve approaches the vertical line $x = a$ from both sides, with the function values going to positive or negative infinity. The x-axis is labeled with 'x = a'.</p>	graph or table of values	$\lim_{x \rightarrow a} f(x)$ does not exist