

Figure 2.4

Figure 2.4: A diagram illustrating the relationship between a function $f(x)$ and its graph. The graph shows a curve in the first quadrant, starting at the origin and increasing. The x-axis is labeled x and the y-axis is labeled y . A point $(a, f(a))$ is marked on the curve, with a vertical dashed line connecting it to the x-axis at a and a horizontal dashed line connecting it to the y-axis at $f(a)$. The area under the curve from $x=0$ to $x=a$ is shaded, representing the definite integral $\int_0^a f(x) dx$. The function is labeled $f(x)$ and the graph is labeled $y = f(x)$.

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