

A graph illustrating the difference quotient for a function f . A black curve represents the function f . A point P is marked on the curve at $(a, f(a))$, indicated by a green dot and a label. A blue secant line passes through P and another point on the curve located h units to the left, marked by a blue dot. The vertical distance between the curve and the secant line at the right endpoint is labeled $f(a) - f(a - h)$ in orange. A green horizontal line segment connects the point P to the secant line, and an orange vertical line segment connects the secant line to the curve, forming a right-angled triangle.

$$f(a) - f(a - h)$$

$$P: (a, f(a))$$

$$h$$