Ito: $\int_0^t f(X_s)\,dW_s = \lim_{N\to\infty} \sum_{i=0}^{N-1} f(X_{t_i})\,\Delta W_i$

Stratonovich: $\int_0^t f(X_s)\circ dW_s = \lim_{N\to\infty} \sum_{i=0}^{N-1} f\left(\frac{X_{t_i} + X_{t_{i+1}}}{2}\right)\Delta W_i$

for small time steps

$$f\left(\frac{X_{t_i} + X_{t_{i+1}}}{2}\right) \approx f(X_{t_i}) + \frac{1}{2} f'(X_{t_i})(X_{t_{i+1}} - X_{t_i})$$

plugging it in,

$$\int_0^t f(X_s)\circ dW_s = \int_0^t f(X_s)\,dW_s + \frac{1}{2}\sum_{i=0}^{N-1} f'(X_{t_i})(X_{t_{i+1}} - X_{t_i})\,\Delta W_i$$

$$= \int_0^t f(X_s)\,dW_s + \frac{1}{2}\sum_{i=0}^{N-1} f'(X_{t_i})\,\Delta t$$

$$= \int_0^t f(X_s)\,dW_s + \frac{1}{2}\int_0^t \frac{\partial f(X_s)}{\partial W_s}\,dt_s$$