```
    \int_{c}^{d} \pi(R(y))^{2} y 

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    \int_{c}^{d} f(x)g(x) dx 

    f 

    f

          \int xe^x dx,
      e^x \sin x dx
      F(x) 
f(x) 
f 
F'(x) = f(x).
\int_{f}^{f} f(x)dx
      f(x)dx = F(x) + C
    \int_0^1 \sqrt{1 + \cos x} dx
f(x) = 3x^2 + 3x^
        \lim_{\Delta x \to 0} f(x + \Delta x) - f(x)\Delta x
        = \lim_{\Delta x \to 0} 3(x + \Delta x)^2 + 12 - (3x^2 + 12)\Delta x
```