

③ 19.  $f(x) = \sqrt{649}$

$x = 64$

$\Delta x = .9$

$dy = \frac{1}{2} x^{-1/2} dx$

$dy = \frac{1}{2\sqrt{x}} dx$

$dy = \frac{1}{2\sqrt{64}} \cdot .9$

$dy = \frac{1}{16} \cdot .9$

$dy = .05625$

$\sqrt{649} = \sqrt{64} + .05625$

$x \frac{1}{2} = 8 + .05625 = 8.05625$

$\frac{1}{2} \cdot \frac{1}{\sqrt{x} + 1} = 1$

$\frac{1}{\sqrt{x} + 1} = 1$

$\frac{1}{\sqrt{x} + 1} = 1$

$\sqrt{x} + 1 = 1$

④ 20.  $f(x) = 2x^2 - 3$

⑤  $f(x) = e^{3x} + 1$

$f'(x) = e^{3x} \cdot 3$

$2 = 3e^{3x}$

$\frac{2}{3} = e^{3x}$

$\frac{2}{3}$

$\ln \frac{2}{3} = 3x$

$\frac{\ln 2 - \ln 3}{3} = x$

$\frac{2}{3}$

⑥  $f(x) = 3^{\pi x}$

$\ln 3 (3^{\pi x}) \pi$

$\ln 3 (3^{\pi x}) \pi$

$3 + 5\pi = 1$

$2 + 5(1)\pi = 1$

$11 = 1$