$$f(x) = \begin{cases} \frac{x^2}{18} & , \quad -3 < x < 3 \\ 0 & , \quad \text{otherwise} \end{cases}$$

For ____

$F(x) =$ ____ $= 0$

For $-3 < x < 3$

$F(x) =$ ____ $+$ ____

$= 0 +$ ____

$$= \frac{x^3}{54} - \left(\frac{-1}{2}\right)$$

$$= \frac{x^3}{54} + \frac{1}{2}$$

For ____

$F(x) =$ ____ $+$ ____

$$= \frac{1}{2} + \frac{1}{2} + 0$$

$$= 1$$

$$F(x) = \begin{cases} 0 & , \quad x \le -3 \\ \text{____} & , \quad \text{____} \\ 1 & , \quad x \ge 3 \end{cases}$$

$x \le -3$
$F(-3)$
$\int_{-\infty}^{x} 0 \ dt$
$-3 < x < 3$
$\left[\frac{t^3}{54}\right]_{-3}^{x}$
$F(3)$
$\int_{-3}^{x} \frac{t^2}{18} \ dt$
$\frac{x^3}{54} + \frac{1}{2}$
$x \ge 3$
$\int_{3}^{x} 0 \ dt$

For

$F(x) = \quad = 0$

$$f(x) = \begin{cases} \frac{1}{4} & , \ 0 \le x < 1 \\ \frac{3}{8}(3-x) & , \ 1 \le x \le 3 \\ 0 & , \ otherwise \end{cases}$$

For $0 \le x < 1$

$F(x) = \quad + $

$= 0 +$

$= \frac{t}{4} - 0$

$F(x) =$

For $1 \le x < 3$

$F(x) = \quad +$

$= \frac{1}{4} +$

$= \frac{1}{4} + \frac{3}{8}\left[\left(3x - \frac{x^2}{2}\right) - \frac{5}{2}\right]$

$= \frac{1}{4} + \frac{9x}{8} - \frac{3x^2}{16} - \frac{15}{16}$

$F(x) =$

For

$F(x) = \quad +$

$= \frac{-27}{16} + \frac{27}{8} - \frac{11}{16} + 0$

$F(x) =$

$$\therefore F(x) = \begin{cases} \quad & , \ x < 0 \\ \frac{x}{4} & , \ 0 \le x < 1 \\ \frac{-3x^2}{16} + \frac{9x}{8} - \frac{11}{16} & , \ 1 \le x < 3 \\ 1 & , \ x \ge 3 \end{cases}$$

$\int_{-\infty}^{x} 0 \, dt$
$F(0)$
1
$x < 0$
$\int_{1}^{x} \frac{3}{8}(3-t) \, dt$
$\frac{x}{4}$
$\frac{3}{8}\left[3t - \frac{t^2}{2}\right]_1^x$
$\left[\frac{t}{4}\right]_0^x$
$\int_{0}^{x} \frac{1}{16} \, dt$
$F(1)$
$F(3)$
$\frac{-3x^2}{16} + \frac{9x}{8} - \frac{11}{16}$
$\int_{9}^{x} 0 \, dt$
$x \ge 3$
0