

$$1. \int_C \underbrace{(y-x)}_M dx + \underbrace{(8x-y)}_N dy$$

$$= \int_{x=0}^{x=9} \int_{y=x^2-8x}^{y=x} (8-1) dy dx$$

$$= 7 \int_{x=0}^{x=9} \left[y \right]_{y=x^2-8x}^{y=x} dx$$

$$= 7 \int_{x=0}^{x=9} [x - (x^2 - 8x)] dx$$

$$= 7 \int_{x=0}^{x=9} (-x^2 + 9x) dx$$

$$= 7 \left[-\frac{1}{3}x^3 + \frac{9}{2}x^2 \right]_{x=0}^{x=9}$$

$$= 7 \left[-\frac{1}{3}(9)^3 + \frac{9}{2}(9)^2 - \left(-\frac{1}{3}(0)^3 + \frac{9}{2}(0)^2 \right) \right]$$

$$= \left(\frac{1701}{2} \right)$$

PoIc

$$x^2 - 8x = x$$

$$x^2 - 8x - x = 0$$

$$x^2 - 9x = 0$$

$$x(x-9) = 0$$

$$x=0 \quad x-9=0$$

$$x=0 \quad x=9$$