$f := 1 + \cos(x)$

$$1 + \cos(x) \tag{1}$$

$fd := diff(f, x)$

$$-\sin(x) \tag{2}$$

$grad := \sqrt{(f)^2 + (fd)^2}$

$$\sqrt{(1 + \cos(x))^2 + \sin(x)^2} \tag{3}$$

$\int grad \, dx$

$$-\frac{4 \cos\left(\dfrac{1}{2} x\right) \left(-1 + \cos\left(\dfrac{1}{2} x\right)^2\right)}{\sin\left(\dfrac{1}{2} x\right) \sqrt{\cos\left(\dfrac{1}{2} x\right)^2}} \tag{4}$$

$\displaystyle\int_0^{2\pi} grad \, dx$

$$8 \tag{5}$$

$\displaystyle\int \sqrt{1 + 2 \cdot \cos(x) + \cos^2(x) + \sin^2(x)} \, dx$

$$-\frac{4 \cos\left(\dfrac{1}{2} x\right) \left(-1 + \cos\left(\dfrac{1}{2} x\right)^2\right)}{\sin\left(\dfrac{1}{2} x\right) \sqrt{\cos\left(\dfrac{1}{2} x\right)^2}} \tag{6}$$

$\displaystyle\int_0^{2\pi} \sqrt{1 + 2 \cdot \cos(x) + \cos^2(x) + \sin^2(x)} \, dx$

$$8 \tag{7}$$