

$$\text{int}(\sin(x), x = 0 \dots \text{Pi});$$

**(1)**

$$\text{int}\left(\text{int}(r^2, r = 4 \dots 8 \cos(t)), t = -\frac{\text{Pi}}{3} \dots \frac{\text{Pi}}{3}\right)$$

$$128\sqrt{3} - \frac{128}{9}\pi$$

**(2)**

$$\text{int}\left(\text{int}(r^3 \cos(t), r = 4 \dots 8 \cos(t)), t = -\frac{\text{Pi}}{3} \dots \frac{\text{Pi}}{3}\right);$$

$$\frac{2816}{5}\sqrt{3}$$

**(3)**

$$\text{int}\left(\text{int}(r^3 \sin(t), r = 4 \dots 8 \cos(t)), t = -\frac{\text{Pi}}{3} \dots \frac{\text{Pi}}{3}\right);$$

**(4)**

$$\text{int}\left(\text{int}(r^4, r = 4 \dots 8 \cos(t)), t = -\frac{\text{Pi}}{3} \dots \frac{\text{Pi}}{3}\right);$$

$$\frac{100352}{25}\sqrt{3} - \frac{2048}{15}\pi$$

**(5)**

$$\text{evalf}(\%);$$

**(6)**

```
with(plots) :
?polar
polarplot(cos(t), t = 0 .. 2 Pi);
```

