1(4) \( \int_{0}^{\pi/4} \cos^2 x \, dx = ? \)

Hint: \( \cos^2 x = \frac{1 + \cos 2x}{2} \) which you can integrate by separating it into two fractions.
\( \sin \pi/2 = 1, \ \sin 0 = 0 \)

1(4) \( \int_{0}^{\pi/6} \cos^3 x \, dx = ? \)

Hint: \( \cos^3 x = \cos^2 x \cos x = (1 - \sin^2 x) \cos x = \cos x - \sin^2 x \cos x \)
\( \sin(\pi/6) = \frac{1}{2}, \ \sin 0 = 0 \)