2) $$\int_{-1}^{2} kx^2\,dx = k\int_{-1}^{2} x^2\,dx = k\cdot\frac{1}{3}x^3\Big|_{-1}^{2}$$

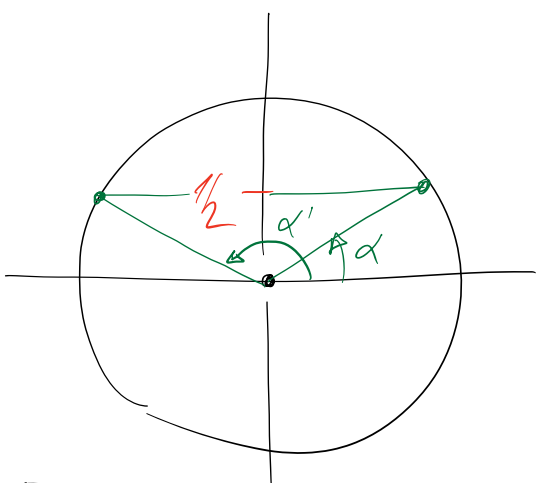
$$= \frac{k}{3}\left(8-(-1)\right) = \frac{k}{3}\cdot 9 = 3k$$

On peut donc écrire : $3k = \frac{2}{3} \Leftrightarrow k = \frac{2}{9}$

c) $$\int_{0}^{k/2} \cos(t)\,dt = \sin(t)\Big|_{0}^{k/2}$$

$$= \left(\sin(k/2) - \sin(0)\right) = \sin(k/2)$$

On a donc $\sin(k/2) = \frac{1}{2}$



$\Leftrightarrow \sin(k/2) = \frac{1}{2}$

$\Leftrightarrow \frac{k}{2} = \frac{\pi}{6} + l\,2\pi$

ou $\frac{k}{2} = \frac{5\pi}{6} + l\,2\pi$

$$\Leftrightarrow \quad k = \frac{\pi}{3} + l \cdot 4\pi$$

$$k = \frac{5\pi}{3} + l \cdot 4\pi$$

wec $l \in \mathbb{Z}$