

3.  $T: \mathbb{P}_2 \rightarrow \mathbb{P}_2$ ,  $T(p) = p(0) - \frac{1}{2} p(2)t$ . Calculate  $T^{167}(-16+3t)$

$$p(t) = -16 + 3t \Rightarrow p(0) = -16, \quad p(2) = -16 + 6 = -10$$

$$\Rightarrow T(-16+3t) = -16 - \frac{1}{2} \cdot (-10)t = -16 + 5t$$

$$\Rightarrow T^{167}(-16+3t) = (-16 + 5t)^{167}$$