

3.37
72

$$W_0^{1992} + W_1^{1992} + W_2^{1992} = (W_0^3)^{664} + (W_1^3)^{664} + (W_2^3)^{664} = 1 + 1 + 1 = 3$$

$$W_0^{1991} + W_1^{1991} + W_2^{1991} = W_0^{1989} \cdot W_0^2 + W_1^{1989} \cdot W_1^2 + W_2^{1989} \cdot W_2^2 = 1 \cdot W_0^2 + 1 \cdot W_1^2 + 1 \cdot W_2^2$$

$$z^3 = 1 = \text{cis } 0 \quad \text{Sei } z = \text{cis } \theta$$

$$W_0 = \text{cis } 0$$

$$W_1 = \text{cis } 120$$

$$W_2 = \text{cis } 240$$

$$W_0^2 = \text{cis } 0$$

$$W_1^2 = \text{cis } 240$$

$$W_2^2 = \text{cis } 480 = \text{cis } 120$$

$$W_0^3 = 1$$

$$W_1^3 = -\frac{1}{2} - \frac{\sqrt{3}}{2}i$$

$$W_2^3 = -\frac{1}{2} + \frac{\sqrt{3}}{2}i$$

$$W_0^2 + W_1^2 + W_2^2 = 1 - \frac{1}{2} - \frac{\sqrt{3}}{2}i - \frac{1}{2} + \frac{\sqrt{3}}{2}i = 0$$