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$$2b = a + c \quad \text{||} \cdot \frac{1}{2}$$

$$2(c^2 + ca + a^2) \stackrel{?}{=} a^2 + ab + b^2 + b^2 + bc + c^2 \quad \text{||} \cdot 3$$

$$2c^2 + 2ca + 2a^2 \stackrel{?}{=} a^2 + a\left(\frac{a+c}{2}\right) + 2\left(\frac{a+c}{2}\right)^2 + c\left(\frac{a+c}{2}\right) + c^2$$

$$\downarrow = a^2 + \frac{a^2+ac}{2} + \frac{a^2+2ac+c^2}{2} + \frac{ac+c^2}{2} + c^2$$

$$= 2a^2 + 2ac + 2c^2$$