



$$C_0 = [0, 1]$$

$$C_1 = \left[\frac{0}{3}, \frac{1}{3}\right] \cup \left[\frac{2}{3}, \frac{3}{3}\right]$$

$$C_2 = \left[\frac{0}{9}, \frac{1}{9}\right] \cup \left[\frac{2}{9}, \frac{3}{9}\right] \cup \left[\frac{6}{9}, \frac{7}{9}\right] \cup \left[\frac{8}{9}, \frac{9}{9}\right]$$

$$C_3 = \left[\frac{0}{27}, \frac{1}{27}\right] \cup \left[\frac{2}{27}, \frac{3}{27}\right] \cup \left[\frac{6}{27}, \frac{7}{27}\right] \cup \left[\frac{8}{27}, \frac{9}{27}\right] \cup \left[\frac{18}{27}, \frac{19}{27}\right] \cup \left[\frac{20}{27}, \frac{21}{27}\right] \cup \left[\frac{24}{27}, \frac{25}{27}\right] \cup \left[\frac{26}{27}, \frac{27}{27}\right]$$

$$C_4 = \left[\frac{0}{81}, \frac{1}{81}\right] \cup \left[\frac{2}{81}, \frac{3}{81}\right] \cup \left[\frac{6}{81}, \frac{7}{81}\right] \cup \left[\frac{8}{81}, \frac{9}{81}\right] \cup \left[\frac{18}{81}, \frac{19}{81}\right] \cup \left[\frac{20}{81}, \frac{21}{81}\right] \cup \left[\frac{24}{81}, \frac{25}{81}\right] \cup \left[\frac{26}{81}, \frac{27}{81}\right] \cup \left[\frac{54}{81}, \frac{55}{81}\right] \cup \left[\frac{56}{81}, \frac{57}{81}\right] \cup \left[\frac{60}{81}, \frac{61}{81}\right] \cup \left[\frac{62}{81}, \frac{63}{81}\right] \cup \left[\frac{72}{81}, \frac{73}{81}\right] \cup \left[\frac{74}{81}, \frac{75}{81}\right] \cup \left[\frac{78}{81}, \frac{79}{81}\right] \cup \left[\frac{80}{81}, \frac{81}{81}\right]$$

$$C_5 = \left[\frac{0}{243}, \frac{1}{243}\right] \cup \left[\frac{2}{243}, \frac{3}{243}\right] \cup \left[\frac{6}{243}, \frac{7}{243}\right] \cup \left[\frac{8}{243}, \frac{9}{243}\right] \cup \left[\frac{18}{243}, \frac{19}{243}\right] \cup \left[\frac{20}{243}, \frac{21}{243}\right] \cup \left[\frac{24}{243}, \frac{25}{243}\right] \cup \left[\frac{26}{243}, \frac{27}{243}\right] \cup \left[\frac{54}{243}, \frac{55}{243}\right] \cup \left[\frac{56}{243}, \frac{57}{243}\right] \cup \left[\frac{60}{243}, \frac{61}{243}\right] \cup \left[\frac{62}{243}, \frac{63}{243}\right] \cup \left[\frac{72}{243}, \frac{73}{243}\right] \cup \left[\frac{74}{243}, \frac{75}{243}\right] \cup \left[\frac{78}{243}, \frac{79}{243}\right] \cup \left[\frac{80}{243}, \frac{81}{243}\right] \cup \left[\frac{162}{243}, \frac{163}{243}\right] \cup \left[\frac{164}{243}, \frac{165}{243}\right] \cup \left[\frac{168}{243}, \frac{169}{243}\right] \cup \left[\frac{170}{243}, \frac{171}{243}\right] \cup \left[\frac{180}{243}, \frac{181}{243}\right] \cup \left[\frac{182}{243}, \frac{183}{243}\right] \cup \left[\frac{186}{243}, \frac{187}{243}\right] \cup \left[\frac{188}{243}, \frac{189}{243}\right] \cup \left[\frac{216}{243}, \frac{217}{243}\right] \cup \left[\frac{218}{243}, \frac{219}{243}\right] \cup \left[\frac{222}{243}, \frac{223}{243}\right] \cup \left[\frac{224}{243}, \frac{225}{243}\right] \cup \left[\frac{234}{243}, \frac{235}{243}\right] \cup \left[\frac{236}{243}, \frac{237}{243}\right] \cup \left[\frac{240}{243}, \frac{241}{243}\right] \cup \left[\frac{242}{243}, \frac{243}{243}\right]$$

⋮

$$C_n = \frac{1}{3}C_{n-1} \cup \left(\frac{2}{3} + \frac{1}{3}C_{n-1}\right)$$

$$C = \bigcap_{n=0}^{\infty} C_n$$