Capital Invested with Declining Balance Depreciation (Residual Value Given)

$CI_0 := 100$ Initial investment

$R_n := 10$ Residual value

$n := 5$ Useful life

$p := 1 - \sqrt[n]{\frac{R_n}{CI_0}}$ Declining balance rate

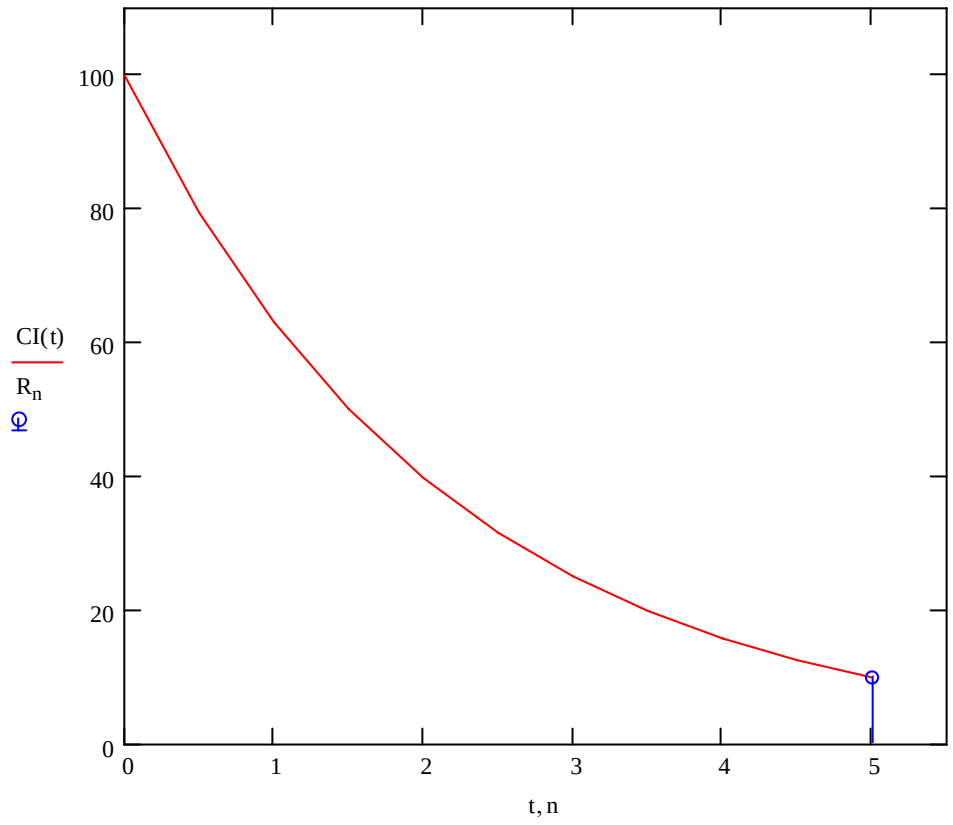
$p = 0.369$

$t := 0, 0.5 .. n$ Time

$CI(t) := CI_0 \cdot (1 - p)^t$ Capital invested

$CI(t) =$

100
79.433
63.096
50.119
39.811
31.623
25.119
19.953
15.849
12.589
10



$CI_a := \frac{\int_0^n CI(t)\, dt}{n}$ Average capital invested

$CI_a := \frac{CI_0}{n} \cdot \frac{(1 - p)^n - 1}{\ln(1 - p)}$

$CI_a = 39.087$