Macro Module 4 Solow growth model depreciation rate practice exam questions

Question 4.1: Depreciation rate

An economy follows a Solow growth model with no technological progress. In equilibrium

s = savings rate = 26.95%
y* = steady state income per worker = 189 units per worker per annum
k* = steady state capital per worker = 849 units per worker
n = population growth rate = 1.87% per annum

What is the annual depreciation rate of capital in the steady state?

A. 13.94%
B. 14.40%
C. 14.86%
D. 15.32%
E. 15.78%

Answer 4.1: steady state growth rate of capital per worker is zero, so $s \times (y/k) - s\delta - n = 0 \Rightarrow$

$$26.95\% \times (189 / 849) - 26.95\% \times \delta - 1.87\% = 0$$
$$\delta = (0.2695 \times (189 / 849) - 0.0187) / 0.2695 = 15.32\%$$