Answer on Question #44470–Math–Algebra

Question:

Students in a fifth-grade class were given an exam. During the next 2 years, the same students were retested several times. The average score was given by the model

$$f(t) = 86 - 20\,log_{10}(t+1), 0 \le t \le 24$$

where t is the time in months.

(a) What is the average score on the original exam?

(b) What was the average score after 6 months?

(c) What was the average score after 18 months?

Solution.

(a) On the original exam t=0, hence the average score is

$$f(0) = 86 - 20\,log_{10}(1) = 86$$

(b) The average score after 6 months

$$f(6) = 86 - 20\,log_{10}(7) = 86 - 20 * 0.845 = 69.1$$

(c) The average score after 18 months

$$f(18) = 86 - 20\,log_{10}(19) = 86 - 20 * 1.279 = 60.42$$

Answer. $f(0) = 86,\ f(6) = 69.1,\ f(18) = 60.42$.