

Question 37

The psychologist Strong measured average percentage memory retention (p , %) with passing time (t , minutes). The measurements were taken five times during the first hour after subjects memorized a list of disconnected items, and then at various times up to a week later. Figure 6 shows a scatter plot of p against $\log t$.

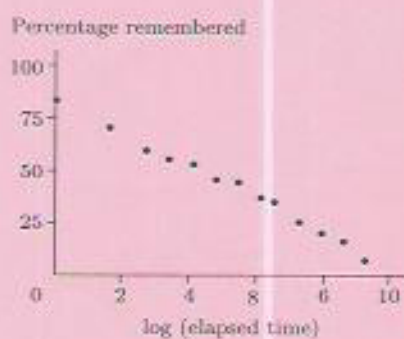


Figure 6

The fitted straight line through the scatter plot has equation

$$p = 0.85 - 0.08 \times \log t.$$

According to the fitted straight line model, when will nothing be remembered of the original list of items?

[2]

$$\begin{aligned}
 0 &= 0.85 - 0.08 \log t \\
 \log t &= \frac{0.85}{0.08} = 10.625 \\
 t &= e^{10.625} \\
 0 &= 0.85
 \end{aligned}$$