Problem of the Week
Problem B and Solution
Your Teeth, You Must Care For

Problem
Some dentists recommend that you brush your teeth twice a day for 2.5 minutes each time. Assume for these problems that this recommendation has been followed. Also assume there are no leap years.

a) How many seconds per day of brushing are required by this recommendation?

b) About how many hours would you brush your teeth in a year?

c) Over the past 25 years, for about how many days would this hockey player have brushed what teeth he has?

d) Yoda was about 900 years old. Regularly, his teeth he did brush. For about how many weeks would he have brushed his teeth throughout his life?

Solution

a) It is recommend that you brush for 2.5 minutes twice per day, for a total of 5 minutes per day. The recommended number of seconds per day is 5 minutes per day × 60 seconds per minute = 300 seconds per day.

b) The recommended number of minutes per year is 5 minutes per day × 365 days per year = 1825 minutes per year. This is equal to 30 hours and 25 minutes, or $30\frac{5}{12}$ hours ≈ 30.42 hours. Alternatively, 5 minutes is equal to $\frac{1}{12}$ of an hour, giving $\frac{1}{12}$ hours per day × 365 days = $\frac{365}{12}$ hours or $30\frac{5}{12}$ hours.

c) The number of hours of brushing in 25 years is equal to $\frac{365}{12}$ hours per year × 25 years = $\frac{9125}{12}$ hours = $760\frac{5}{12}$ ≈ 760.42 hours. This gives a total of $\frac{9125}{12}$ hours ÷ 24 hours per day ≈ 31.7 days, slightly less than 32 days.

d) The number of hours of brushing in 900 years would be $\frac{365}{12}$ hours per year × 900 years = $\frac{328500}{12}$ = 27 375 hours of brushing. This gives 27 375 hours of brushing ÷ 24 hours per day = 1140.625 days of brushing.

This is equal to 1140.625 days of brushing ÷ 7 days per week ≈ 162.95 or almost 163 weeks of brushing.