Star Date

When the Federation was founded, it was decided that all members of the Federation would use a standard calendar.
The Federation declared midnight on 2162-01-04 to be stardate zero. Thus stardates began on the fourth day of the year 2162, and increased at the rate of five units per day. The Federation decided to limit the length of a stardate to four digits. As a result, what would have been stardate 10000 (midnight on 2167-06-27) was made stardate 0000 again.

The first group of stardates could be referred to, when necessary, as zeroth-issue stardates, such as [0]1234, and the new issue as first-issue stardates, such as [1]1234. This reset to zero continued to occur every five and a half years, until 2266, when the 19th issue of stardates started. That year, Starfleet put together a committee to investigate what type of stardate system would be more acceptable. The committee's report, in 2267, recommended that the stardate rate be slowed to 0.1 units per day. This would make the same number of digits as had been previously used, and had covered five and a half years, cover two and a half centuries. It was decided that this system should be field-tested between stardates [19]7340 and [19]7840, i.e., 500 units, 5000 days. So from 2270-01-26 to 2283-10-05 this system was used.

This new system proved to be unpopular, and as a result, it was decided in 2280 that at the end of the test period (SD [19]7840) the new rate should not continue. Instead, a 0.5 units per day rate would be used, which would solve the main problems of both earlier systems. This system was used from stardate [19]7840, and was intended to be a permanent change. In 2318, over 150 years after the incorporation of the Federation, it was decided that starships should start to use a quad-cent calendar, which would keep the years the right length but make the day slightly longer. The quad-cent calendar eliminates leap years by assuming a standard year length of 365.2425 days. In keeping with this longer-term view of time, the stardates were increased to five digits, and the rate was changed to 1000 units per standard year. So on what would have been stardate [20]5006.0, i.e., midnight on 2323-01-01, stardates were reset to [21]00000.

The historical division of the Federation is having a difficult time converting dates to stardates. You are required to write a program that accepts a single date in the form *yyyy-mm-dd* (where *yyyy*=year, *mm*=month, and *dd*=day) and prints out the corresponding stardate without the issue number.

Test Data

Sample Input: `2372-01-11`
Expected Output: `49027.3`