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A44 B156(151) C52195(2.22) D57 Vol. II ¶21

今有築城，上廣二丈，下廣五丈四尺，高三丈八尺，長五千五百五十尺。秋程人功三百尺。問須功幾何？

Now we have a wall to build, of upper width two 丈, lower width five 丈 four 尺, height three 丈 eight 尺, and length five thousand five hundred and fifty 尺. Over the course of autumn, each man outputeth three hundred 尺. We ask: how many mens' output be needed?

A has 湏 for 須.

答曰：二萬六千一十一功。術曰：并上下廣，得七十四尺。半之，得三十七尺。以高乘之，得一千四百六尺。又以長乘之，得積七百八十萬三千三百尺。以秋程人功三百尺除之，即得。

Answer saith: twenty-six thousand and eleven man's output.
Method saith: combining the upper and lower widths resulteth in seventy-four 尺. Halving it resulteth in thirty-seven 尺. Multiplying it by the height resulteth in one thousand, four hundred and six 尺. Also multiplying it by the length, resulteth in the volume seven million, eight hundred and three thousand, three hundred 尺. Dividing it by each man's output over the course of autumn, three hundred 尺, we are done.

$$W = \frac{a+b}{2} \cdot hL \div R$$

$$= \frac{20尺+54尺}{2} \cdot 38尺 \cdot 5550尺 \div \frac{300尺^3}{人}$$

$$= 26011人.$$

END ¶II 22