**Multiplying Decimals**

**Trailing zeros** are the zeros at the end of a number that have no nonzero digits after them. Since trailing zeros after the decimal point do not change the value of a decimal, we usually don’t write them.

For example, we usually write 0.2 instead of 0.20, 0.2000, 0.200000, and so on.

**EXAMPLE**

Compute $0.25 \times 0.04$.

We begin by multiplying $25 \times 4 = 100$. Then, we determine where to place the decimal point.

0.25 and 0.04 have a total of $2 + 2 = 4$ digits right of the decimal point.

So, we move the decimal point in 100 so that there are 4 digits to the right of the decimal point, **including** the trailing zeros.

After we have placed the decimal point, we can remove the trailing zeros.

So, $0.25 \times 0.04 = 0.01$.

**PRACTICE**

Compute each product below.

89. $0.2 \times 0.5 = \underline{\hspace{2cm}}$

90. $0.06 \times 0.25 = \underline{\hspace{2cm}}$

91. $0.075 \times 0.8 = \underline{\hspace{2cm}}$

92. $0.00125 \times 0.032 = \underline{\hspace{2cm}}$

93. Not including trailing zeros, how many digits are to the right of the decimal point in the product below?

$$0.9 \times 0.8 \times 0.7 \times 0.6 \times 0.5 \times 0.4 \times 0.3 \times 0.2 \times 0.1$$

94. Not including trailing zeros, how many digits are to the right of the decimal point in the product $(0.3)^{15} \times (0.07)^{15}$?

95. Not including trailing zeros, how many digits are to the right of the decimal point in the product $(0.6)^{15} \times (0.05)^{15}$?
PRACTICE

For the problems below, fill in each blank with a digit so that the equation is true and no numbers have trailing zeros.

96. \(0.7 \times 0.\underline{\quad} = 0.5\underline{\quad}\)

97. \(10.\underline{\quad} \times 0.\underline{\quad} = 3.\underline{\quad}6\)

98. \(0.\underline{\quad} \times 0.2 = 0.\underline{\quad}\)

99. \(0.6 \times 2.\underline{\quad} = \underline{\quad}.\underline{\quad}\)

100. \(0.\underline{\quad} \times 4.\underline{\quad} = 0.\underline{\quad}3\)

101. \(0.0\underline{\quad} \times 0.0\underline{\quad} = 0.003\)

102. \(0.\underline{\quad}5 \times 0.0\underline{\quad} = 0.03\)

103. \(0.3\underline{\quad} \times 0.0\underline{\quad} = 0.007\)

104. ★ \(0.\underline{\quad} \times 0.\underline{\quad} = 0.7\)

105. ★ \(1.\underline{\quad} \times 0.\underline{\quad} = 0.04\)