Multiplying Decimals

1a. Write 0.342 and 0.21 as fractions.

1b. Multiply the two fractions from part a.

1c. Convert the fraction from part b to a decimal.

The standard algorithm for multiplying decimals is to ignore the decimal point and multiply the numbers together as usual. After you get your answer, put the decimal point back in so that the number of digits behind the decimal point in the product is equal to the sum of the number of digts behind the decimal point in each of the numbers you multiplied together.

1d. Calculate $0.342 \cdot 0.21$ using the standard algorithm.

1e. How does the process in parts a - c justify the rule about where the decimal place goes?

2a. Write 3.15 and 64.2 as fractions.

2b. Multiply the two fractions from part a.

2c. Convert the fraction from part b to a decimal.

2d. Calculate $3.15 \cdot 64.2$ using the standard algorithm. (Be careful about the fact that the product ends in a 0.)

Dividing Decimals

1a. Write 1.29 and 0.25 as fractions.

1b. Divide 1.29 by 0.25 using their fraction representations from part a.

1c. Convert the fraction from part b to a decimal.

The standard algorithm for dividing decimals is to first multiply the divisor by the appropriate power of 10 so that it is a whole number. Next, multiply the dividend by this same power of 10. Finally, perform long division as normal, placing the possible decimal point directly above its current position in the dividend.

1d. Calculate $1.29 \div 0.25$ using the standard algorithm.

1e. Why do you get the same answer even after multiplying both numbers by something?

2a. Write 51.78 and 2.4 as fractions.

2b. Divide 51.78 by 2.4 using their fraction representations from part a.

2c. Convert the fraction from part b to a decimal.

2d. Calculate $51.78 \div 2.4$ using the standard algorithm.