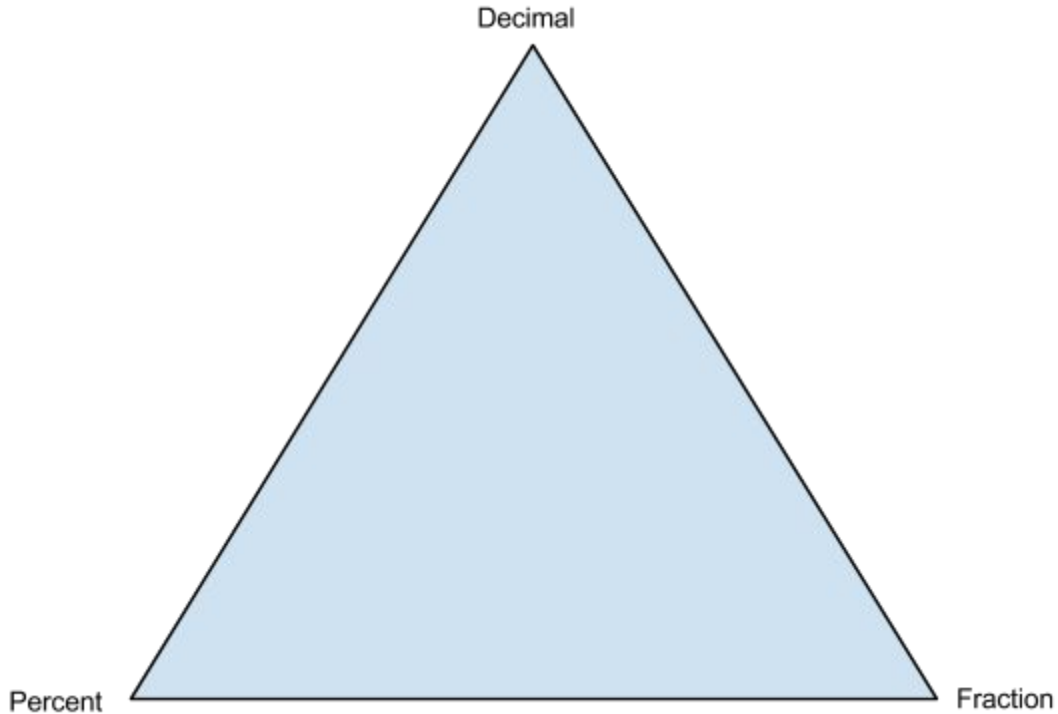


## Review of Multiplication and Division by Multiples (Powers) of 10

1. What is the product of any number multiplied by 0?
2. What is this property called?
3. What is the product of any number multiplied by 1?
4. What is this property called?
5. How do we multiply by 10?
6. How do we multiply by 100?
7. How do we multiply by 1000?
8. What is the “easy” way to multiply by any power of 10?
9. What is the quotient of any number divided by 0?
10. What is the quotient of any number divided by 1?
11. How do we divide by 10 without using long division? (Hint: division reverses multiplication)
12. Using the same procedure, how do we divide by 100?
13. Using the same procedure, how do we divide by 1000?
14. What is the “easy” way to divide by any power of 10?
15. What is the value of any number to the power 0?
16. What is the value of 100?
17. What is the value of any number multiplied by 100?
18. What is the value of any number divided by 100?
19. When 10 is raised to a negative power, the negative exponent does not make the number negative. Instead, it means that 10 is moved to the denominator and raised to the same positive power:  
$$10^{-x} = \frac{1}{10^x}$$
20. The value of 10 raised to a negative power is between \_\_\_\_\_ and \_\_\_\_\_.
21. Multiplying a number by a negative power of 10 is the same as dividing by the corresponding positive power of 10. This means that multiplying a number by 0.1 (one tenth) is the same as dividing by \_\_\_\_\_ and multiplying a number by 0.01 (one hundredth) is the same as dividing by \_\_\_\_\_.
22. Dividing a number by a negative power of 10 is the same as multiplying by the corresponding positive power of 10. This means that dividing a number by 0.01 (one hundredth) is the same as multiplying by \_\_\_\_\_.

**You should ALWAYS multiply and divide multiples of 10 the “easy” way from now on!**

## Converting Between Percents, Decimals, and Fractions



- Drop the % sign and write the remaining number in the numerator of a fraction with denominator 100. If there is a decimal in the numerator, multiply numerator and denominator by a power of 10 in order to eliminate the decimal. Reduce to lowest terms if required.
- Drop the % sign and rewrite the remaining number as a decimal. If there is no decimal, insert one to the right of all the numbers. Move the decimal two places to the left.
- Identify the place value of the digit furthest to the right. Drop the decimal (if there is one) and write the original number (without decimal) as the numerator of a fraction with denominator corresponding to the place value identified above. Reduce to lowest terms if required.
- Move the decimal two places to the right and add a % sign. If there is no decimal in the original number, insert one to the right of all the numbers.
- Convert mixed numbers to improper fractions if necessary. Divide the numerator by the denominator.
- Convert mixed numbers to improper fractions if necessary. Divide the numerator by the denominator. Move the decimal two places to the right and add a % sign. If there is no decimal in the original number, insert one to the right of all the numbers. If the quotient is a non-terminating decimal, use a decimal approximation or write the remainder as a fraction in lowest terms.

**Remember that “percent” means “out of 100” and is represented by the symbol %.**