1. Numbers:
   
   (a) Integers
   
   Examples:

   (b) Rational Numbers

   Examples:

   (c) Irrational Numbers

   Examples:

   (d) Real Numbers

   Examples:

2. Fractions:

   Example: Find the sum of \( \frac{7}{5} \) and \( \frac{2}{15} \).

   Example: Find the product of \( \frac{5}{7} \) and \( \frac{4}{110} \).
Example: What is $\frac{6}{7}$ divided by $\frac{7}{3}$?

Example: Convert .24 to a fraction.

3. Arithmetic operations on the real numbers
   The following is a list of things which is always true:

   \[
   a + b = \underline{\quad} \tag{1}
   \]
   \[
   a \cdot b = \underline{\quad} \tag{2}
   \]
   \[
   a(b + c) = \underline{\quad} \tag{3}
   \]
   \[
   (b + c)a = \underline{\quad}. \tag{4}
   \]

Example: Simplify the expression $2.3x + 5.1x$.

Example: Simplify the expression $21(\frac{7+x}{7})$. 


4. Rules for exponents

(a) \(a^0 = \) ________ (if \(a\) is a nonzero real number).

Examples:
- \(1^0\)
- \(a^0\)

(b) \(a^b a^c = \) ________.

Examples:
- \(3 \times 3^2\)
- \(5^x (5^2)\)
- \(6 \times 6^{-1}\)
- \(4^{\frac{1}{2}} \times 4^{\frac{1}{2}}\)
- \(8^{\frac{1}{4}} (8^{\frac{1}{4}}) (8^{\frac{1}{4}})\)

(c) \((ab)^c = \) ________.

Examples:
- \((2 \times 5)^2\)
- \((xy)^7\)
- \((\frac{4}{9})^{\frac{1}{2}}\)

(d) \((a^b)^c = \) ________.

Examples:
- \((5)^2\)
- \((8^{\frac{1}{4}})^4\)
- \((\pi^2 x^4)^5\)

5. As a consequence of (b), we have that \(a^{-b} = \) ________ and \(\frac{1}{a^{-x}} = \) ________.

Examples:
- \(\left(\frac{1}{x}\right)^{-3}\)
- \(x^{-3}\)
- \(\frac{a^5 b^{-4}}{(a^{-3} x^2)^2} (ab^{-3})^2\)