Q1. Write the command to generate the following sets of equation. Also, write the generated equations.

1. $\left(\frac{a+b}{x+y}\right)^{\frac{1}{3}}$

2. $\lim_{n\to\infty}(1+\frac{1}{n})^n = e$

3. $\prod_{i=1}^{n}$

4. $\bigcup_{i=1}^{n}$

5. $\sum_{x=0}^{100} f(x)$

6. $\alpha + \beta = \gamma + \delta$

7. $\sqrt[5]{10000}$

8. $\sqrt[8]{27}$

9. $\int \int_{x=0}^{\pi} \int_{x=0}^{100} x\,dx$

10. $\int \int_{i=0}^{r} \int_{x=0}^{\infty} x\,dx$

11. X^{x^x}

12.

$$x + 3y = 2. \tag{1}$$
$$x \le 3 + 4x + 5y.$$

13.

$$S[i] = \begin{cases} 0 & \text{if } T_i \ge \lambda \\ 1 & \text{if } T_i < \lambda \end{cases} \tag{2}$$

14.

$$x + 3y \quad = \quad 2. \tag{3}$$
$$x \quad \le \quad 3 + 4x + 5y. \tag{4}$$

15.

$$\sum_{k=0}^{\infty} \frac{(-1)^k}{k+1} = \int_{0}^{\infty} \frac{dx}{x}$$

16.

$$x \quad = \quad 2. \tag{5}$$
$$x^2 \quad \ge \quad 3^2 + 5^2 y. \tag{6}$$

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