

(1) Simplify the rational expression $\frac{x^2 + 3x + 2}{x^2 - x - 2}$

(2) Simplify the rational expression $\frac{x^2}{x^2 - 4} - \frac{x + 1}{x + 2}$

(3) Simplify the rational expression $\frac{\frac{y}{x} - \frac{x}{y}}{\frac{1}{y} - \frac{1}{x}}$

(4) Solve the equation $x^2 - 5x + 6 = 0$

(5) Solve the equation $2x^2 + 4x + 1 = 0$

(6) Rationalize the expression and simplify $\frac{\sqrt{10}}{\sqrt{5} - 2}$

(7) Multiply by the conjugate and simplify $\frac{\sqrt{4+h} - 2}{h}$

(8) Find an equation for the line passing through the points $(-7, 4)$ and $(5, -12)$ in the plane.

(9) Sketch a graph of the following functions: $y = x$, $y = x^2$, $y = x^3$, $y = x^{-1}$, $y = x^{1/2}$, $y = x^{1/3}$

(10) Sketch a graph of $y = -2(x + 3)^2 - 4$

(11) Sketch a graph of the function $f(x) = \begin{cases} x^2, & x < 2 \\ 6, & x = 2 \\ 10 - x, & x > 2 \text{ and } x \leq 6 \end{cases}$