

PS 4

$$(1) (2x - 5)(4x^2 + 10x + 25)$$

$$(2) \frac{4\frac{1}{2}}{3\frac{7}{9}} \quad \frac{\frac{49}{12}}{\frac{34}{9}} \quad \frac{\frac{49}{12}}{4} \cdot \frac{9}{34} = \frac{147}{136}$$

$$(3) -7[5x + 7 - 2(x + 1)] = -4x + 3$$

$$-7[5x + 7 - 2x - 2] = -4x + 3$$

$$-7[3x + 5] = -4x + 3$$

$$-21x - 35 = -4x + 3$$

$$-38 = +17x$$

$$\frac{-38}{17} = x$$

(4)

$$y = 4x - 4$$

$$4x + 4x - 4 = 12$$

$$4x + y = 12$$

$$(2, 4)$$

$$8x = 16$$

$$x = 2$$

$$4 - 4 = 0$$

(5)

$$-35 \leq -5x - 5 \leq -25$$

$$-30 \leq -5x \leq -20$$

$$6 \geq x \geq 4$$

$$4 \leq x \leq 6$$

(6)

$$f(x) = \begin{cases} 2(x+4)^2 - 1 & \text{on } (-\infty, -3] \\ |x+1| & \text{on } (-3, 0] \\ \sqrt{x} + 1 & \text{on } (0, \infty) \end{cases}$$

(7)

$$\frac{775 - 600}{600} \times 100$$

$$20.8\%$$

(8)

$$3 \left((6(x-1) + 2) - [2(3x-1) + 2] \right)$$

$$6x - 6 + 2$$

$$3(6x - 4 - (6x))$$

$$3(-4) = -12$$

(9)

$$F(g(x)) = 5(4x-1) + 12$$

$$20x - 5 + 12 \rightarrow 20x + 7$$

(10)

Decreasing $(-7, -4)$

Constant $(-4, 3)$

Increasing $(3, 7)$