

$$(1) \quad y - 3 = -\frac{3}{4}(x - 3)$$

$$(2) \quad \frac{f(x)}{g(x)} = \frac{2x - 5}{\sqrt{x + 4}} \quad x + 4 \geq 0$$

$$x \geq -4$$

$$(3) \quad \frac{1300 - 1107}{1107} \times 100 \quad \approx 17.40\%$$

$$(4) \quad 4^2 x^{-10} x^{-12} \quad 16 x^{-22}$$

$$\frac{16}{x^{22}}$$

$$(5) \quad \begin{cases} x - 5y = 16 \quad (-5) \\ 5x - 6y = 42 \end{cases}$$

$$\begin{array}{r} 5x - 6y = 42 \\ -5x + 25y = -80 \\ \hline 19y = -38 \\ y = -2 \end{array}$$

$$5x + 12 = 42$$

$$5x = 30$$

$$x = 6$$

$$(6, -2)$$

$$3(6) + 12 = 42 \quad \checkmark$$

(6)  $x^3 - 8x^2 + 10x + 12$

$$\begin{array}{r|rrrr} 6 & 1 & -8 & 10 & 12 \\ & \downarrow & & & \\ & 6 & -12 & -12 & \\ \hline & 1 & -2 & -2 & 0 \end{array}$$

$x^2 - 2x - 2$

$x = \frac{2 \pm \sqrt{4 - 4(1)(-2)}}{2(1)}$

$\frac{2 \pm \sqrt{12}}{2}$

$\frac{2 \pm 2\sqrt{3}}{2}$

$x = 1 \pm \sqrt{3}$

$(x-6)(x-1-\sqrt{3})(x-1+\sqrt{3})$

(7)  $\frac{1}{2}(x+1)(x-2)^2$

$2 = a(1)(4)$

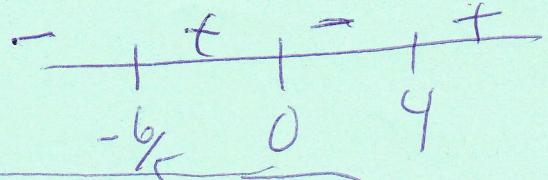
$\frac{1}{2} = a$

(8)  $\frac{1(x+5)(x-4)}{(x+3)(x-1)}$

(9)  $5x^3 - 14x^2 - 24x \leq 0$

$x(5x^2 - 14x - 24) \leq 0$

$x(5x+6)(x-4) \leq 0$



$(-\infty, -\frac{6}{5}] \cup [0, 4]$