

1. Extemporale am 10.10.11 [3VKT 1]

$$1) x - (-2(x-3) \cdot 4 - (x-2)) = 26 + 10x$$

$$\Leftrightarrow x - (-8x + 24 - x + 2) = 26 + 10x$$

$$\textcircled{6} \Leftrightarrow x - (-9x + 26) = 26 + 10x$$

$$\Leftrightarrow 10x - 26 = 26 + 10x \quad | -10x$$

$$-26 = 26 \quad (\neq) \quad \Rightarrow \underline{L = \{\}} \quad \underline{\underline{\quad}}$$

$$2) (x-1)^2 = x^2 - 1$$

$$\Leftrightarrow \underbrace{x^2 - x - x + 1}_{\quad} = \underbrace{x^2 - 1}_{\quad} \quad | -x^2$$

$$\textcircled{4} \Leftrightarrow -2x + 1 = -1 \quad | +1$$

$$\Leftrightarrow -2x = -2 \quad | :(-2)$$

$$x = +1 \quad \underline{L = \{1\}}$$

$$3) \frac{x-a}{2x} = \frac{3}{8} \quad | \cdot 8x$$

$$\Leftrightarrow 8(x-a) = 6x$$

$$\textcircled{4} \Leftrightarrow 8x - 8a = 6x$$

$$\Leftrightarrow 2x = 8a$$

$$\Leftrightarrow x = 4a \quad \underline{L = \{4a\}}$$

$$4) \frac{2}{a} = \frac{1}{2b} - \frac{1}{x} \Leftrightarrow \frac{1}{x} = \frac{1}{2b} - \frac{2}{a} = \frac{a}{2ab} - \frac{4b}{2ab}$$

$$\textcircled{4} \Leftrightarrow \frac{1}{x} = \frac{a-4b}{2ab} \quad | (\quad)^{-1} \Leftrightarrow \underline{x = \frac{2ab}{a-4b}}$$

$$5) 4x^6y^8 - (-3x^8y^{-2} : (-3x^2y^{-10})) + (-x)^2y^8(-x^4) - \overset{-36}{(xy)^2}$$

$$= 4x^6y^8 - \left(\frac{-3x^8y^{-2}}{-3x^2y^{-10}} + x^2y^8(-x^4) \right) + \frac{1}{4x^6y^{12}}$$

$$\textcircled{6} = 4x^6y^8 - (x^6y^8 - x^6y^8) + \frac{1}{4}x^6y^{-12}$$

$$= 4x^6y^8 - x^6y^8 + x^6y^8 + \frac{1}{4}x^6y^{-12}$$

$$= \underline{4x^6y^8} - \frac{1}{4}x^6y^{-12}$$