

$$\begin{aligned}
 4. \quad & -5(3a-7) \leq 2(1-9a) \\
 & -15a + 35 \leq 2 - 18a \\
 & \quad \quad \quad +15a \quad \quad \quad +15a \\
 & 35 \leq 2 - 3a \\
 & -2 \quad -2 \\
 & \frac{33}{-3} \leq \frac{-3a}{-3} \\
 & -11 \geq a \\
 & \boxed{a \leq -11}
 \end{aligned}$$

$$\begin{aligned}
 6. \quad & (x^3 - 3x^2 - 2x + 5) - (x^2 - 2x - 3) \\
 & \underline{x^3 - 3x^2 - 2x + 5 - x^2 + 2x + 3} \\
 & x^3 + 8 + x - 4x^2 \\
 & \boxed{x^3 - 4x^2 + 8}
 \end{aligned}$$

$$\begin{aligned}
 9. \quad & (-x^3)^2 x^4 \\
 & -x^3 \cdot -x^3 \cdot x^4 \quad \quad \quad x^6 \cdot x^4 \\
 & \quad \quad \quad x^6 \cdot x^4 \quad \quad \quad x^{10} \\
 & \quad \quad \quad x^{10}
 \end{aligned}$$

13+4

$$\begin{array}{ccc}
 900x^2y^2z^3 & 360x^2y^2z^2 & 120z^4 \\
 \begin{array}{c} \uparrow \\ 90 \quad 10 \\ \uparrow \quad \uparrow \\ 9 \quad 10 \quad 25 \\ \uparrow \quad \uparrow \\ 3 \quad 3 \quad 25 \end{array} & \begin{array}{c} \uparrow \\ 30 \quad 10 \\ \uparrow \quad \uparrow \\ 3 \quad 10 \quad 25 \\ \uparrow \\ 25 \end{array} & \begin{array}{c} \uparrow \\ 12 \quad 10 \\ \uparrow \quad \uparrow \\ 6 \quad 2 \quad 25 \\ \uparrow \\ 25 \end{array} \\
 2^3 \cdot 3^2 \cdot 5^2 \cdot x^2 \cdot y^2 \cdot z^3 & 2^2 \cdot 3 \cdot 5^2 \cdot x^2 \cdot y^2 \cdot z^2 & 2^3 \cdot 3 \cdot 5 \cdot z^4 \\
 \text{GCF: } 2^2 \cdot 3 \cdot 5 \cdot z^2 & \text{LCM: } 2^3 \cdot 3 \cdot 5^2 \cdot x^2 \cdot y^2 \cdot z^4 &
 \end{array}$$