Name: _____

Operations with Polynomials

Exercise 1: Find the difference when $9x^3 + x^2 - 5x + 2$ is subtracted from $4x^3 - 2x^2 + 7x - 8$.

Exercise 2: Joe tried to subtract $\left(y^2 - 4y + 3\right) - \left(4y^2 + 5y - 2\right)$ and obtained $-3y^2 - 9y + 1$.
   1) Explain what Joe did wrong. Use complete sentences.
   2) Write the correct answer.
   3) Check your answer by adding.

Exercise 3: Kim tried to subtract $\left(y^2 - 4y + 3\right) - \left(4y^2 + 5y - 2\right)$. She got an answer of $-3y^2 + y + 1$.
   1) Explain what Kim did wrong. Use complete sentences.
   2) Write the correct answer.
   3) Check your answer by adding.

Exercise 4: Mary tried to subtract $\left(2x^2 + 4x - 2\right) - \left(5x^2 + 6\right)$ and obtained $-3x^2 + 4x + 4$.
   1) Explain what Mary did wrong. Use complete sentences.
   2) Write the correct answer.
   3) Check your answer by adding.

Exercise 5: Michael tried to subtract $\left(9x^2 - 4x + 6\right) - \left(-3x^2 + 2x - 5\right)$ and obtained $12x^2 - 6x + 1$.
   1) Explain what Michael did wrong. Use complete sentences.
   2) Write the correct answer.
   3) Check your answer by adding.

Exercise 6: Add $\left(4x^2 + 2x + 7\right) + \left(3x^2 + 6x + 4\right)$ using tile representation.

Exercise 7: Add $\left(x^2 + 3x + 2\right) + \left(2x + 5\right)$ using tile representation.

Exercise 8: Subtract $\left(5x^2 + 6x + 4\right) - \left(5x + 1\right)$ using tile representation.

Exercise 9: If $\left(5x^2 - 8\right)$ is subtracted from $\left(12x^2 + 5\right)$, what is the result?

Exercise 10: Subtract $\left(x^2 + 2x\right)$ from $\left(-x^2 + x\right)$.

Grade 9