LEARNING AS ONE NATION
Expanded Project

Math 10_15

JHS LEARNING ACTIVITY

Name: _____ **Grade/Score:** _____
Grade and Section: _____ **Date:** _____

Subject *(Check or choose from below.)*

- ☐ Religion/Values Education
- ☐ Natural Sciences
- ☐ Araling Panlipunan
- ☐ Filipino
- ☐ English
- ☐ Math
- ☐ TLE / ICT
- ☐ MAPEH
- ☐ HGP _____

Type of Activity *(Check or choose from below.)*_____

- ☐ Concept Notes
- ☐ Skills: Exercise / Drill
- ☐ Performance Task
- ☐ Illustration
- ☐ Formal Theme
- ☐ Informal Theme
- ☐ Others: _____

Activity Title: Long Division of Polynomials

Learning Target: To divide polynomials using the long division method.

References: *(Author, Title, Pages)*
1) F.B. Orines, et al., Next Century Mathematics, pp. 98-100
2) V.J.A. Dublin and M.V. Carpio-Bernido, CVIF Learning Activities

Example: Find the quotient of $(2x^2 + 4x - 32) \div (x - 3)$.

Step 1: First, arrange the terms of the polynomial in order of descending powers of x. If any term is missing (no term in a certain power of x), use zero as a numerical coefficient for the missing term.

Step 2: Rewrite the equation in the form, $b\overline{)D}$, where D is the dividend and b is the divisor.

Step 3: Divide the first term of the dividend by the first term of the divisor. Write the answer on top of the dividend.

Step 4: Multiply the answer obtained by the divisor in step 3.

Step 5: Subtract the product in step 4 and bring down the next term.

Step 6: Repeat steps 3-5 with the difference obtained in step 5 as the new dividend.

$$
\begin{array}{rl}
 & 2x \quad + 10 \rightarrow quotient \\
x - 3 \,\overline{)} & 2x^2 + 4x - 32 \\
 & \underline{2x^2 - 6x} \qquad\qquad \text{subtract} \\
 & \quad 10x - 32 \\
 & \quad \underline{10x - 30} \qquad\qquad \text{subtract} \\
 & \qquad -2 \rightarrow remainder
\end{array}
$$

Step 7: If after the last term of the dividend the difference is not zero, this means we have a remainder. To represent the remainder, we write it in the form $\frac{remainder}{divisor}$.

Therefore, $(2x^2 + 4x - 32) \div (x - 3) = \boxed{\mathbf{2x + 10 - \frac{2}{x-3}}}$.

Exercises: Find the quotient of the given polynomials.

a) $(4x^2 - 10x - 12) \div (x - 4)$ b) $(6x^2 + 4x + 2) \div (x + 1)$