# Unit 1 Learning Targets

**Name** _____ **Period** _____ **Date** _____

| Learning Target | Assessment | M.L.4 | M.L.3 | M.L.2 | M.L.1 |
|---|---|---|---|---|---|
| 1. I can add, subtract, & multiply polynomials. | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 2. I can use polynomial identities to factor and expand polynomials. | 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 3. I can extend polynomial identities to complex numbers. | 1.8, activities, quizzes, review, test, project | | | | |
| 4. I know and can apply the Remainder Theorem. | 1.4, 1.5, 1.6, 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 5. I can find end behavior without graphing. | 1.4, 1.5, 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 6. I can identify the zeros of a polynomial in standard form or factored form. | 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 7. I can construct a rough graph using the zeros, multiplicity of a zero and end behavior. | 1.5, 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 8.  I can use long division & synthetic division to simplify a rational expression. | 1.3, 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 9.  I can use the rational zeros theorem to write a list of possible rational zeros of a polynomial function. | 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 10.  I can find the bounds for the zeros. | 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 11.  I can write a polynomial function when given the zeros of the function. | 1.7, 1.8, activities, quizzes, review, test, project | | | | |
| 12.  I can find all complex zeros of a polynomial function and write it in factored form. | 1.8, activities, quizzes, review, test, project | | | | |

**Mastery Level 4** = I've got this - I can teach this to others. **Mastery Level 3** = I understand - I can do this by myself.
**Mastery Level 2** = I mostly get it - I can do this with help.  **Mastery Level 1** = I don't understand - I cannot do this yet.
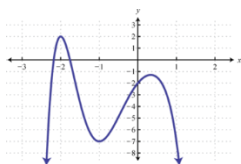


$$(2x^4 - 3x^2 + 4x - 9) \div (x + 2)$$

$$\begin{array}{r|rrrrr} -2 & 2 & 0 & -3 & 4 & -9 \\ & & -4 & 8 & -10 & 12 \\ \hline & 2 & -4 & 5 & -6 & \boxed{3} \end{array}$$

$$(2x^4 - 3x^2 + 4x - 9) \div (x + 2) = 2x^3 - 4x^2 + 5x - 6 + \frac{3}{x+2}$$

$$\require{enclose}
\begin{array}{r}
9x^2 - 12x + 16 \\
3x+4 \enclose{longdiv}{27x^3 + 0x^2 + 0x + 64} \\
\underline{-(27x^3 + 36x^2)\phantom{+0x+64}} \\
-36x^2 + 0x + 64 \\
\underline{-(-36x^2 - 48x)\phantom{+64}} \\
48x + 64 \\
\underline{-(48x + 64)} \\
0
\end{array}$$