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

WORKSHEET DIVIDING POLYNOMIALS

Dividing polynomials is similar to division of whole numbers. Follow the steps below:

1. Divide.
2. Multiply.
3. Subtract.
4. Bring down the next term and repeat the process. If there is no term to bring down, write the remainder over the divisor and add it to the quotient.

EXAMPLE

Divide $(2x^2 + x - 1)$ by $(x + 3)$.

Divide $2x^2$ by x. Place $2x$ in the quotient.

Multiply $2x$ by $(x + 3)$.

Subtract $(2x^2 + 6x)$ from $(2x^2 + x)$.

Bring down -1.

Divide $-5x$ by x. Place -5 in the quotient.

Multiply -5 by $(x + 3)$.

Subtract $(-5x - 15)$ from $(-5x - 1)$.

$$
\begin{array}{r}
2x - 5 \quad + \dfrac{14}{x+3} \\
x+3\overline{)\,2x^2 + \ x - 1} \\
\underline{2x^2 + 6x} \\
-5x - 1 \\
\underline{-5x - 15} \\
14
\end{array}
$$

There are no terms to bring down. Write the remainder over the divisor and add it to the quotient. $2x - 5 + \dfrac{14}{x+3}$

DIRECTIONS: Divide.

1. $(x^2 + 3x + 1) \div (x + 4)$
2. $(2x^2 - 2x + 5) \div (x + 1)$
3. $(3x^2 - 4x - 10) \div (x + 2)$
4. $(x^2 - 2x + 1) \div (x - 4)$
5. $(-4x + 4x^2 + 2) \div (2x - 1)$
6. $(x^2 - 1) \div (x + 2)$