Math 3   Name_____ **KEY**_____

Unit 8.2 Long Division of Polynomials advanced PRACTICE   Period____

Divide.

1) $\left(-32 - 43n - 6n^2 + 5n^3\right) \div \left(5n + 4\right)$

$$n^2 - 2n - 7 - \frac{4}{5n + 4}$$

2) $\left(9p^3 + 9p^2 - 5\right) \div \left(9p + 9\right)$

$$p^2 - \frac{5}{9p + 9}$$

3) $\left(24b^5 - 39b^3 + 9b^2 - 6b - 20\right) \div \left(3b + 3\right)$

$$8b^4 - 8b^3 - 5b^2 + 8b - 10 + \frac{10}{3b + 3}$$

4) $\left(20r^3 - 8r^2 - 9\right) \div \left(5r - 2\right)$

$$4r^2 - \frac{9}{5r - 2}$$

5) $\left(8n^5 + 41n^4 - 51n^3 + n^2 + 65n + 17\right) \div \left(8n + 1\right)$

$$n^4 + 5n^3 - 7n^2 + n + 8 + \frac{9}{8n + 1}$$

6) $\left(4x^5 - 23x^4 + 2x^3 + 30x^2 + 11x + 9\right) \div \left(4x + 1\right)$

$$x^4 - 6x^3 + 2x^2 + 7x + 1 + \frac{8}{4x + 1}$$

7) $\left(10m^3 - 9m^2 + 9m + 2\right) \div \left(10m + 1\right)$

$$m^2 - m + 1 + \frac{1}{10m + 1}$$

8) $\left(-47x^3 + 10x^5 - 74x^4 - 7x^2 - 3x - 39\right) \div \left(-8 + x\right)$

$$10x^4 + 6x^3 + x^2 + x + 5 + \frac{1}{-8 + x}$$

9) $\left(10x^4 - 5x^3 - 90x + 54\right) \div \left(10x - 5\right)$

$$x^3 - 9 + \frac{9}{10x - 5}$$

10) $\left(6x^3 - 33x^2 + 3x + 15\right) \div \left(6x - 3\right)$

$$x^2 - 5x - 2 + \frac{3}{2x - 1}$$

11) $(10x^3 + 27x^2 + 14x + 5) \div (x^2 + 2x)$

$10x + 7 + \dfrac{5}{x^2+2x}$

12) $(5x^4 + 14x^3 + 9x) \div (x^2 + 3x)$

$5x^2 - x + 3$

13) $(2x^4 + 2x^3 - 10x - 9) \div (x^3 + x^2 - 5)$

$2x + \dfrac{-9}{x^3+x^2-5}$

14) $-x^3 + 2x^2 - 2x + 3) \div (x^2 - 1)$

$-x + 2 + \dfrac{-3x+5}{x^2-1}$

15) $(4x^3 - 7x^2 - x + 10) \div (x^2 - 3)$

$4x - 7 + \dfrac{11x-11}{x^2-3}$

16) $(x^4 + 2x^2 + 3x + 6) \div (x^3 - 3)$

$x + \dfrac{2x^2+6x+6}{x^3-3}$