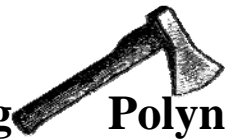


# Chopping Polynomials



Name \_\_\_\_\_

Directions: The object of this assignment is to find remainders. Once the remainder is discovered, locate its accompanying letter value and decipher the hidden message about division at the end of this document.

For problems #1-8, find the remainder by **long division**. Show all work.

1.  $(x^2 + 3x + 2) \div (x + 1)$

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

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

4.  $(2x^3 + 7x^2 + x - 4) \div (x - 5)$

5.  $(4x^3 - 9x + 2) \div (2x + 1)$

6.  $(5x^2 + 8) \div (x + 2)$

7.  $(x^4 - 6x^2 - 4) \div (x - 1)$

8.  $(-3x^3 + 5x^2 - 6x - 7) \div (x + 4)$

For problems #9-17, find the remainder by the **Remainder Theorem**. Show all work.

9.  $(x^6 + 3x^2 - 9) \div (x + 2)$

10.  $(x^6 - 12) \div (x - 1)$

11.  $(x^3 - 6) \div (x - 6)$

12.  $\frac{x^6 - 11}{x - 1}$

13.  $\frac{3x^{10} - 4x^5 - 2}{x + 1}$

14.  $\frac{-2x^4 + 2x^2 - 1}{x - 2}$

15.  $(2x^3 - x^2 + 4x - 8) \div (x - 3)$

16.  $(x^{80} - x^{33} - 1) \div (x + 1)$

17.  $(2x^2 - 3x + 4) \div (2x - 1)$

For problems #18-20, find the remainder by a **method of your choice**. Show all work.

18.  $\frac{x^4 - 2x^3 + 3x - 1}{x}$

19.  $\frac{2 - x^5}{x - 2}$

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

## Answer Box:

<b>A:</b> 6	<b>B:</b> 7	<b>C:</b> 5	<b>D:</b> 20	<b>E:</b> -1	<b>F:</b> -30	<b>G:</b> 1
<b>H:</b> -9	<b>I:</b> 160	<b>K:</b> 0	<b>L:</b> -10	<b>N:</b> -25	<b>O:</b> 49	<b>P:</b> 327
<b>R:</b> -11	<b>S:</b> 3	<b>T:</b> 426	<b>U:</b> 28	<b>V:</b> 289	<b>Y:</b> 67	<b>Z:</b> 210

## Message:

5      2 12 5 13 1      7 15 12 18      3 17      4 7 18  
 10 18 17 6 12 4      15 19      4 7 18      6 14 3 8 18 10 17 18  
 20 3 8 3 20 3 14 16      2 9      11 18 10 15