☑ Use when you get it right all by yourself

 $oldsymbol{\mathcal{S}}$  Use when you did it all by yourself, but made a silly mistake

**H**Use when you could do it alone with a little help from teacher or peer

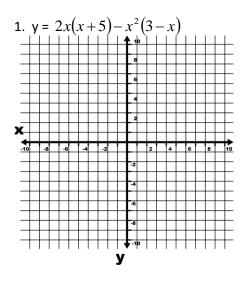
**G** Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

NUse when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Standard form	1 - 3		
Naming polynomials	1 - 3		
Degree (odd/even)	1 - 3		
Leading coefficient (positive/negative)	1 - 3		
End behavior		1 - 3	
Increasing/Decreasing		1 - 3	
Domain & Range		1 - 3	
Multiplying Polynomials (Pascal's Triangle)		4 - 5	
Dividing Polynomials (Long & Synthetic)	9, 11, 12	6 - 8, 10, 13	
Synthetic Substitution/ Remainder Theorem	14 - 16		
Factoring Polynomials	17 -22	17 - 22	17 - 22
Adding & Subtracting Polynomials		2, 3	1

1-3: Simplify each polynomial (put the polynomial in standard form), name the polynomial (by degree and type), sketch a graph, state the lead coefficient, state the end behavior, determine the increasing/decreasing intervals, and then state the domain and range in interval notation.



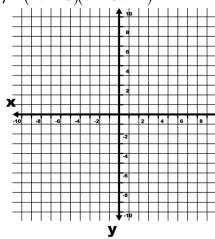
Name: LC: Degree: \_\_\_\_\_ Domain: \_\_\_\_\_ Range: \_\_\_\_\_ Increasing: Decreasing:

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Decreasing:

3. 
$$y = (2n^2 - 3)(n^2 + 5n - 1)$$



3.\_\_\_\_\_

Name:\_\_\_\_\_\_LC:\_\_\_\_

Degree: \_\_\_\_\_ Domain: \_\_\_\_\_ Range: \_\_\_\_\_

EB: \_\_\_\_\_

Increasing:

Decreasing:

## 4-5: Expand using Pascal's Triangle:

4. 
$$(ab-2c)^4$$

4.\_\_\_\_\_

5. 
$$(14+y)^5$$

5.\_\_\_\_\_

## 6-9: Divide using long division. Show your work! Box your final answer

6. 
$$(2m+4m^2-9m^3)(m+2)^{-1}$$

7. 
$$(12r+9r^3-15r^2)\div(3r-1)$$

8. 
$$(2x^3 - 10x^2 - 5) \div (x - 5)$$

9. 
$$\frac{3x^3 - 8x^2 - 33x - 10}{3x^2 + 1}$$

10-13: Divide using synthetic division. Show your work! Box your final answer.

10. 
$$x-2\sqrt{3x^4-6x^2-24}$$

11. 
$$\frac{5+5x-8x^2+4x^3-3x^4}{x-2}$$

12. 
$$\frac{16x^2 - 13x^3 + 2x^4 - 9x + 20}{x - 5}$$

13. 
$$\frac{x^3 + 125}{x + 5}$$

## 14-16: Use the remainder theorem to evaluate each of the polynomials. Show your work!

14.  $P(x) = x^3 - 3$ ; P(5)

14.\_\_\_\_

15.  $R(x) = x^3 - 2x^2 + 3x - 1$ ; R(4)

15.\_\_\_\_

16.  $R(t) = 4t^4 - 3t^2 + 5$ ; R(-3)

16.\_\_\_\_

17 – 22: Factor the polynomials completely. Show all work.

18. 
$$a^2x - b^2x + a^2y - b^2y$$

19. 
$$4x^2 + 7x + 3$$

$$20.3a^2z - 27z$$

$$21. x^3 + 125$$

**CYU Reflection:** How far can you go: basic, intermediate, or advanced?

## Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

