NAME_____ Date _____ Pd _____ Quiz Review 4.1 - 4.4 CYU

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.

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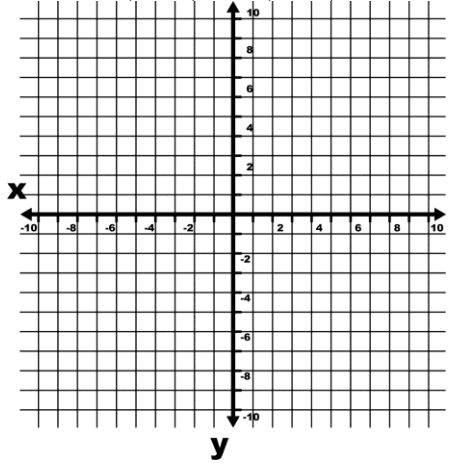
1._____

Name:_____ LC:_____
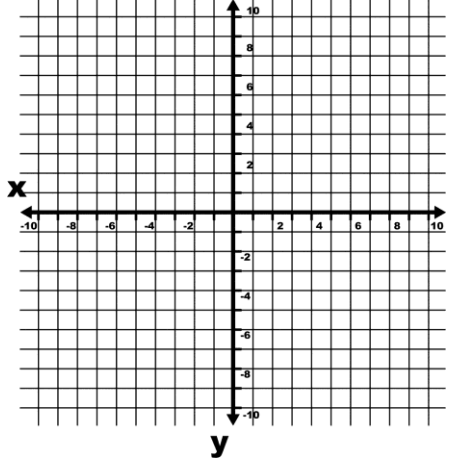
Degree: _____ Domain: _____ Range: _____

EB: _____

Increasing: _____

Decreasing: _____

2. $y = 2(a-6)(2a+7)$

2._____

Name:_____ LC:_____
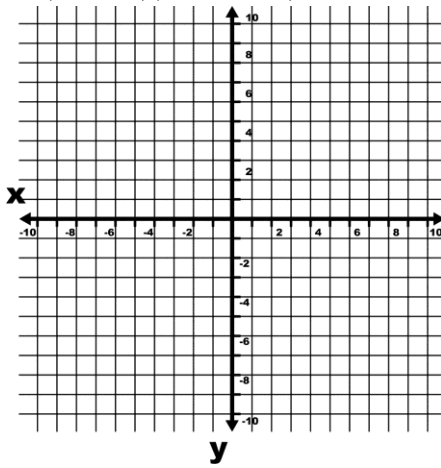
Degree: _____ Domain: _____ Range: _____

EB: _____

Increasing: _____

Decreasing: _____

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

3._____

Name:_____ LC:_____

Degree: _____ Domain: _____ Range: _____

EB: _____

Increasing: _____

Decreasing: _____

4-5: Expand using Pascal's Triangle:

4. $\left(ab - 2c\right)^4$

4._____

5. $\left(14 + y\right)^5$

5._____

6-9: Divide using long division. Show your work! $\boxed{\text{Box your final answer}}$

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

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

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

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

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

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

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

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

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

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

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

14._____

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

15._____

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

16._____

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

17. $16m^2n + 12mn^2$

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

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

20. $3a^2z - 27z$

21. $x^3 + 125$

22. $n^4 - 81$

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.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Basic | | Intermediate | | | Advanced | | Solved ALL! |