Name KEY Class _____ Date _____

Write each polynomial in standard form. Then classify it by both degree and by number of terms. Then describe the end behavior of the graph of the function.

1. $4x + x + 2$

Standard Form: $5x + 2$

Classify by Degree: LINEAR

Classify by Terms: BINOMIAL

End Behavior: ↗ DOWN - UP

2. $-3 + 3x - 3x$

Standard Form: -3

Classify by Degree: CONSTANT

Classify by Terms: MONOMIAL

End Behavior: N/A

3. $6x^4 - 1$

Standard Form: $6x^4 - 1$

Classify by Degree: QUARTIC

Classify by Terms: BINOMIAL

End Behavior: ↗ UP-UP

4. $1 - 2s + 5s^4$

Standard Form: $5s^4 - 2s + 1$

Classify by Degree: QUARTIC

Classify by Terms: TRINOMIAL

End Behavior: UP-UP

5. $5m^2 - 3m^2$

Standard Form: $2m^2$

Classify by Degree: QUADRATIC

Classify by Terms: MONOMIAL

End Behavior: UP-UP

6. $x^2 + 3x - 4x^3$

Standard Form: $-4x^3 + x^2 + 3x$

Classify by Degree: CUBIC

Classify by Terms: TRINOMIAL

End Behavior: ↖ UP-DOWN

7. $-1 + 2x^2$

Standard Form: $2x^2 - 1$

Classify by Degree: QUADRATIC

Classify by Terms: BINOMIAL

End Behavior: UP-UP

8. $5m^2 - 3m^3$

Standard Form:

Classify by Degree: OOPS... REPEAT OF #5

Classify by Terms:

End Behavior:

9. $5x - 7x^2$

Standard Form: $-7x^2 + 5x$

Classify by Degree: QUADRATIC

Classify by Terms: BINOMIAL

End Behavior: DOWN - DOWN

10. $2 + 3x^3 - 2$

Standard Form: $3x^3$

Classify by Degree: CUBIC

Classify by Terms: MONOMIAL

End Behavior: DOWN - UP ↗

11. $6 - 2x^3 - 4 + x^3$

Standard Form: $-x^3 + 2$

Classify by Degree: CUBIC

Classify by Terms: BINOMIAL

End Behavior: UP-DOWN ↘

12. $6x - 7x$

Standard Form: $-x$

Classify by Degree: LINEAR

Classify by Terms: MONOMIAL

End Behavior: ↖ UP-DOWN

13. $a^3(a^2 + a + 1)$

Standard Form: $a^5 + a^4 + a^3$

Classify by Degree: QUINTIC

Classify by Terms: TRINOMIAL

End Behavior: ↙↗ DOWN – UP

14. $y = 2x^5 + x^2 - 4$

Standard Form: $2x^5 + x^2 - 4$

Classify by Degree: QUINTIC

Classify by Terms: TRINOMIAL

End Behavior: DOWN – UP

15. $p(p - 5) + 6$

Standard Form: $p^2 - 5p + 6$

Classify by Degree: QUADRATIC

Classify by Terms: TRINOMIAL

End Behavior: ∪ UP – UP

16. $y = 6x + 25 + 4x^4 - x^2$

Standard Form: $4x^4 - x^2 + 6x + 25$

Classify by Degree: QUARTIC

Classify by Terms: 4-TERM POLYNOMIAL

End Behavior: UP – UP

17. $-(3 - b)$ $-3+b$

Standard Form: $b - 3$

Classify by Degree: LINEAR

Classify by Terms: BINOMIAL

End Behavior: ↗↙ DOWN – UP

18. $6(2x - 1)$

Standard Form: $12x - 6$

Classify by Degree: LINEAR

Classify by Terms: BINOMIAL

End Behavior: ↗ DOWN – UP

19. $\frac{2}{3} + s^2$

Standard Form: $s^2 + 2/3$

Classify by Degree: QUADRATIC

Classify by Terms: BINOMIAL

End Behavior: UP – UP ∪

20. $y = 20 - 5x^6 + 3x - 11x^3$

Standard Form: $-5x^6 - 11x^3 + 3x + 20$

Classify by Degree: SIXTH-DEGREE

Classify by Terms: 4-TERM POLYNOMIAL

End Behavior: ∩ DOWN – DOWN

21. $y = 5 + 2x + 7x^2 - 5x^3$

Standard Form: $-5x^3 + 7x^2 + 2x + 5$

Classify by Degree: CUBIC

Classify by Terms: 4-TERM POLYNOMIAL

End Behavior: ↘↗ UP – DOWN

22. $y = 3x^4 + 6x^3 - x^2 + 12$

Standard Form: $3x^4 + 6x^3 - x^2 + 12$

Classify by Degree: QUARTIC

Classify by Terms: 4-TERM POLYNOMIAL

End Behavior: ∪ UP – UP

23. $y = 50 - 3x^3 + 5x^2$

Standard Form: $-3x^3 + 5x^2 + 50$

Classify by Degree: CUBIC

Classify by Terms: TRINOMIAL

End Behavior: ↘↗ UP – DOWN

24. $y = -x + x^2 + 2$

Standard Form: $x^2 - x + 2$

Classify by Degree: QUADRATIC

Classify by Terms: TRINOMIAL

End Behavior: ∪ UP – UP