Name: _____

5.2.D1 ~ Power Functions

Past due on: _____ Period: _____

Determine whether the function is a power function. For those that are power functions, state the power and constant of variation.

	Power function?	Power	Constant of variation
1. $f(x) = 9x^{5/3}$			
2. $f(x) = 13^x$			
3. $f(x) = -6x^7$			
4. $f(x) = -2(5)^x$			
5. $f(x) = 3x^{-5}$			

Write the power function in the form $f(x) = kx^a$.

6. $f(x) = 4x^{-5} \cdot x^{10}$

7. $f(x) = -2(x^3)^7$

8. $f(x) = \dfrac{6x^{30}}{15x^{10}}$

9. $f(x) = \dfrac{2x^{14}}{-x^{-7}}$

10. $f(x) = (-6x^4)^2$

11. $f(x) = (3x^4)(2x^7)$

12. $f(x) = \left(\dfrac{-4}{x}\right)^3$

13. $f(x) = \dfrac{8x^4}{2x^{20}}$

14. $f(x) = \sqrt{9x^5}$

15. $f(x) = \sqrt[3]{-8x^4}$

16. $f(x) = \left(3x\sqrt{x^3}\right)^2$

17. $f(x) = 4(x-2)(x+2) + 16$

18. $f(x) = \dfrac{(-x^3)^3}{6}$

19. $f(x) = \dfrac{4}{\sqrt{16x}}$

22. $f(x) = 3\left(\frac{2}{5\sqrt{x}}\right)^4$

23. $f(x) = \frac{(21x^{-13})(2x^5)}{7x^{-6}}$

Factor the polynomial completely. *Refer to your gold poly/quads card. Remember to look for common factors.*

24. $2x^3 + 54$

25. $32x^6 - 2x^2$

26. $3x^4 + 9x^3 + x^2 + 3x$

27. $4x^6 - 20x^4 + 24x^2$