Name _____ Period ____

**Scientific Notation and Polynomial Quiz Review**

**Review Problems (Show your work for each)**

Scientific Notation:

| Write each number in scientific notation: | | |
|---|---|---|
| **1.) 200000** | **2.) 56720** | **3.) $75 \times 10^{4}$** |
| **4.) 0.0036** | **5.) $99 \times 10^{2}$** | **6.) $0.25 \times 10^{-3}$** |
| Write each number in standard notation: | | |
| **7.) $8.62 \times 10^{3}$** | **8.) $2.5 \times 10^{-3}$** | **9.) $6.89 \times 10^{8}$** |
| **10.) $8.9 \times 10^{0}$** | **11.) $3.75 \times 10^{-1}$** | **12.) $45 \times 10^{-4}$** |
| Write each answer in scientific notation: | | |
| **13.) $(3.6 \times 10^{2})(5 \times 10^{5})$** | **14.) $(6 \times 10^{6})(4.32 \times 10^{-5})$** | |
| **15.) $\frac{8.4 \times 10^{8}}{2.0 \times 10^{5}}$** | **16) $\frac{6 \times 10^{5}}{4 \times 10^{-5}}$** | |
| Rewrite each with a single exponent: | | |
| **17.) $7^{4} \cdot 7^{3}$** | **18.) $x^{5} \cdot x^{7}$** | **19.) $(2^{4})^{5}$** |

Use the properties of exponents to rewrite each expression:

| | | |
|---|---|---|
| **20.)** $6m^2 \cdot 5m$ | **21.)** $x^2y^2 \cdot xy$ | **22.)** $(-5t^3)(2t^4)$ |
| **23.)** $(r^6s^5)^2$ | **24.)** $\frac{24x^6}{6x^2}$ | **25.)** $\frac{25t^4v^4}{5t^7v^2}$ |

Simplify each expression:

| | |
|---|---|
| **26.)** $4n^5 + 6 + 2n^2 - 3 - 3n^4 + 2n^5 + 3n^2$ | **27.)** $(4x^3 + 3x^4) + (x^4 - 5x^3)$ |
| **28.)** $(5x + 5) - (5x - 7)$ | **29.)** $(13x^2 - 6x^5 - 2x) + (-10x^2 - 11x + 9x)$ |
| **30.)** $3x(-5x^2 + 4x)$ | **31.)** $(8x - 2)(7x + 6)$ |