Name: _____ Date: _____ Period: _____

# Test Review Ch. 5 DAY TWO CYU

☑ *Use when you get it right all by yourself*

**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)*

**N** *Use when a question was not even attempted*

| CONCEPTS | BASIC | INTERMEDIATE | ADVANCED |
|---|---|---|---|
| Evaluating expressions with exponents | 1 – 4 | | |
| Simplifying exponential expressions | | 5 – 9 | |
| Writing numbers in scientific notation | 10 – 11 | | |
| Converting numbers from scientific notation | 12 - 13 | | |
| Operations with scientific notation | | 14 - 15 | |
| Identifying coefficients | 15 | | |
| Degree of a term & degree of an expression | 15, 16 | | |
| Combining like terms | 17 | | |
| Standard form | 17 – 20 | | |
| Operations with polynomial expressions | 18 - 20 | | |

*Evaluate each expression.*

1. $2^5$ 2. $(-3)^4$ 3. $-3^4$ 4. $4^{-3}$

*Simplify each exponential expression. Write the result using only positive exponents.*

5. $(3x^2)(-5x^9)$ 6. $\frac{y^7}{y^2}$ 7. $\frac{r^{-8}}{r^{-3}}$ 8. $\left(\frac{x^2y^3}{x^3y^{-4}}\right)^2$ 9. $\frac{6^2x^{-4}y^{-1}}{6^3x^{-3}y^7}$

*Express each number in scientific notation.*

10. 563,000 11. 0.0000863

*Write each number in standard notation.*

12. $1.5 \times 10^{-3}$ 13. $6.23 \times 10^4$

*Simplify. Write the answer in standard notation and scientific notation.*

14. $(1.2 \times 10^5)(3 \times 10^{-7})$ 15. $\frac{4.2\times10^6}{2.1\times10^{-5}}$

*15. Complete the table for the polynomial $4xy^2 + 7xyz + x^3y - 2$.*

| Term | Coefficient | Degree of Term |
|---|---|---|
| $4xy^2$ | | |
| 7xyz | | |
| $x^3y$ | | |
| -2 | | |

16. State the degree of the polynomial in number 15.

17. Combine like terms and write the expression in standard form. $5x^2 + 4xy - 7x^2 + 11 + 8xy$

*Perform each indicated operation. Write your final answer in standard form.*

18. $(8x^3 + 7x^2 + 4x - 7) + (8x^3 - 7x - 6)$

19. $5x^3 + x^2 + 5x - 2 - (8x^2 - 4x^2 + x - 7)$

20. Subtract $(4x + 2)$ from the sum of $(8x^2 + 7x + 5)$ & $(x^3 - 8)$.

*Multiply by distributing, FOIL, or Punnett Squares. Write your answer in standard form.*

21. $(3x + 7)(x^2 + 5x + 2)$

22. $3x^2(2x^2 - 3x + 7)$

23. $(x + 7)(3x - 5)$

24. $\left(3x - \frac{1}{5}\right)\left(3x + \frac{1}{5}\right)$

25. $(4x - 2)^2$

26. $(8x + 3)^2$

27. $(x^2 - 9b)(x^2 + 9b)$

**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.