

NAME _____

DATE _____

Module Test A

Module 11

Determine whether each statement is true or false.

1. $6^2 \cdot 6^3 = 6^5$ _____
2. $x^3 \cdot x^4 = x^{12}$ _____
3. $x^3 \cdot y^5 = (xy)^8$ _____
4. $\frac{y^6}{y^2} = y^3$ _____
5. $(x^3)^2 = x^6$ _____
6. Any nonzero number raised to a power of zero is equal to zero. _____
7. The number 36.1×10^8 is written in scientific notation. _____
8. $3x^2 + 5x^2 = 8x^2$ _____

Choose the correct response for each problem.

9. Simplify: $(x^2y)^4$.

a. x^8y^4	b. x^2y^4	c. x^8y^5	d. x^6y^4
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10. Determine which of the following is not equal to 81.

a. $(3^2)^2$	b. $(-3)^4$	c. 3^{-4}	d. 3^4
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11. Simplify: $(x + 8)(x - 8)$.

a. $x^2 - 64$	b. $x^2 + 64$	c. $x^2 - 16$	d. $x^2 + 16$
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12. Simplify: $(2x + 9)^2$.

a. $4x^2 - 81$	b. $4x^2 + 81$	c. $4x^2 - 36x + 81$	d. $4x^2 + 36x + 81$
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13. Write 2.53×10^4 in standard form.

a. 0.0000253	b. 0.000253	c. 25,300	d. 2,530,000
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14. Write 7×10^{-2} in standard form.

a. 0.007	b. 0.07	c. 70	d. 700
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15. Evaluate and leave answers in scientific notation.

- a. $(4 \times 10^{-2})(2 \times 10^7)$ _____
- b. $(2.5 \times 10^4)(6 \times 10^3)$ _____
- c. $(1.3 \times 10^2)(5 \times 10^{-7})$ _____
- d. $\frac{3.6 \times 10^5}{1.2 \times 10^{-2}}$ _____
- e. $\frac{3 \times 10^{15}}{6 \times 10^2}$ _____

16. Simplify the expressions by combining like terms.

- a. $(5x^2 - 6x + 1) + (x^2 - 2x - 4)$ _____
- b. $(a^3 - 2a) + (-a^3 + 2a)$ _____
- c. $(6x - 2y) - (5x - 4y + 1)$ _____
- d. $(5h^3 - 2h) + (h^3 + h^2)$ _____
- e. $(k^3 - 7k) - (3k - k^4)$ _____

17. Simplify the expressions by performing the indicated multiplication.

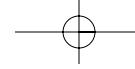
- a. $2x^2y^4 \cdot 3xy^3$ _____
- b. $-4ab^2(2a^2 - b)$ _____
- c. $(x + 4)(x + 5)$ _____
- d. $(x + 5)(x - 5)$ _____
- e. $(x - 3)(x^2 + 3x + 9)$ _____

18. Simplify the expressions by performing the indicated division.

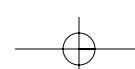
- a. $\frac{8x^6y^4}{12x^2y}$ _____
- b. $\frac{6b^3 + 8b^2 - 2b}{2b}$ _____
- c. $(x^2 + 4x - 21) \div (x - 3)$ _____
- d. $(6x^2 - 4 + 12x) \div (2x + 5)$ _____
- e. $(y^3 - 64) \div (y - 4)$ _____

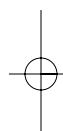
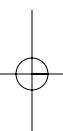
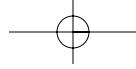
Answer these questions using the directions given.

- 19.** Write the *multiplication rule for exponents* algebraically. Then, explain the rule with a complete sentence. _____
- _____



20. What words do the letters in FOIL represent? Explain how this Method is used to multiply two binomials. Use complete sentences.





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