

Exponents

I. Solve these for warm-up:

1. $5 \times 5 \times 5 \times 5 =$

3. $20 \times 20 \times 20 \times 20 =$

2. $3 \times 3 \times 3 \times 3 \times 3 =$

4. $300 \times 300 \times 300 =$

II. Solve:

1. $3^4 =$

6. $0^5 + 1^5 + 2^5 =$

11. $(-3)^2 =$

2. $5^1 =$

7. $3^4 - 9^2 =$

12. $(-3)^3 =$

3. $9^2 =$

8. $25^2 - 15^2 =$

13. $-3^4 =$

4. $7^0 =$

9. $2^4 - 4^2 =$

14. $(-1)^5 =$

5. $100^3 =$

10. $2^6 - 8^2 - 4^3 =$

15. $(-0)^3 =$

III. Using the laws of exponents simplify the following:

Example: $x \times y \times y \times 5 \times z \times x \times 4 \times y = 20x^2y^3z$

1. $2a + 3a =$

10. $y \times y^2 =$

2. $2a \times 3a =$

11. $y \times y^3 =$

3. $b + 3b + 2b =$

12. $y^2 \times y^2 =$

4. $b \times 3b \times 2b =$

13. $y^2 \times y^3 =$

5. $5a^2 + 7a^2 =$

14. $b \times b^5 \times 7 \times b^2 =$

6. $5a^2 \times 7a^2 =$

15. $3^2 \times x \times 3 \times x^2 \times x^3 =$

7. $2y^2 + 3y^2 =$

16. $c \times a^2 \times a \times c^4 \times 9^2 \times c =$

8. $2y^2 \times 3y^2 =$

17. $n^3 \times 2^2 \times n \times 2 \times 2^2 \times n^2 =$

9. $y + y^2 =$

18. $x^{20} \times 5^2 \times x^3 \times x^{27} \times 2 =$

Name: _____

Last Name: _____

Lesson Topic:
Understanding Exponents

Exponents

$$a^0 = 1 \quad a^1 = a$$

$$a^n \times a^m = a^{n+m}$$

$$a^n \times a^m = a^{n-m}$$

I. Solve these for warm-up:

1. $2 \times 2 \times 2 \times 2 =$

3. $3 \times 3 \times 3 \times 3 =$

2. $2 \times 2 \times 2 \times 2 \times 2 \times 2 =$

4. $100 \times 100 \times 100 =$

II. Solve:

1. $2^7 =$

6. $4^3 - 8^2 =$

11. $(-2)^2 =$

2. $3^5 =$

7. $1^2 - 0^2 =$

12. $(-2)^3 =$

3. $5^3 =$

8. $5^4 - 25^2 =$

13. $-2^4 =$

4. $5^4 =$

9. $12^2 - 12^0 =$

14. $(-2)^5 =$

5. $10^5 =$

10. $3^4 - 3^3 =$

15. $(-1)^3 =$

III. Using the laws of exponents simplify the following:

1. $a + a =$

8. $3a^2 \times 5a^2 =$

2. $a \times a =$

9. $a^2 + a^3 + a^4 =$

3. $b + 3b + 2b =$

10. $a^2 \times a^3 \times a^4 =$

4. $b \times 3b \times 2b =$

11. $a^2 + 2a^3 + 3a^2 =$

5. $a^2 + a^2 =$

12. $a^2 \times 2a^3 \times 3a^2 =$

6. $a^2 \times a^2 =$

13. $a^2 \div a =$

7. $3a^2 + 5a^2 =$

14. $a^3 \div a^2 =$