Exponents and polynomials Worksheet

Algebra

Name _____ Date _____

Warm-up

1. Simplify: $x^5 \cdot x^6$

2. Expand: $5x(x-2)$

3. Simplify: $\dfrac{x^8}{x^2}$

4. Expand: $(x+1)(x+3)$

5. Simplify: $(x^6)^5$

Practice

6. Simplify: $(6x^5)^2$

7. Expand: $(x-1)(x+3)$

8. Evaluate: $\dfrac{5^6}{5^4}$

9. Expand: $(2x+6)(x+5)$

© No Limit Math. Free for personal and classroom use.

10. Evaluate: 6^{-2}

11. Expand: $(x + 11)(x - 11)$

12. Expand: $(x + 4)^2$

Challenge

13. Simplify: $\dfrac{(x^4)^2 \cdot x}{x^3}$

14. A square has side $x + 2$. By how much does its area exceed that of a square with side x? Write an expression.

15. Solve for n: $2^n \cdot 2^7 = 2^{14}$

16. Use a pattern to calculate 92×88 without a calculator.

17. $(x + 3)(x + 8) = x^2 + kx + 24$. Find k.

© No Limit Math. Free for personal and classroom use.

Exponents and polynomials Worksheet: Answer Key

Algebra

1. x^{11}

   Add the exponents.

2. $5x^2 - 10x$

   Multiply each term by $5x$.

3. x^6

   Subtract the exponents.

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

   Multiply every pair, then combine.

5. x^{30}

   Multiply the exponents.

6. $36x^{10}$

   Square both the number and the power.

7. $x^2 + 2x - 3$

   Watch the signs: $(a)(b) = -3$.

8. 25

   Subtract exponents: 5^2.

9. $2x^2 + 16x + 30$

   First terms, outer, inner, last.

10. $\dfrac{1}{36}$

    Negative exponent means reciprocal: $\dfrac{1}{6^2}$.

11. $x^2 - 121$

    The middle terms cancel: difference of squares.

12. $x^2 + 8x + 16$

    Don't drop the middle term $8x$.

13. x^6

    Numerator: x^9. Then subtract 3.

14. $4x + 4$

    $(x + 2)^2 - x^2$.

15. 7

    Same base, so add exponents: $n + 7 = 14$.

© No Limit Math. Free for personal and classroom use.

16. 8096

    It's $(90+2)(90-2) = 90^2 - 2^2$.

17. 11

    The middle coefficient is the sum.

Stuck on something? Book a free 20-minute consultation at nolimitmath.com/book.