Laws of Indices: Multiplying Terms

Write the following expressions in their simplest index form.

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1. Write as a single power: $3 \times 3 \times 3 \times 3$

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2. Write as a single power: $5 \times 5 \times 5$

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3. Write as a single power: $(-2) \times (-2) \times (-2) \times (-2)$

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4. Write in index form: $a \times a \times a \times a \times a$

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5. Simplify: $x^2 \times x^3$

6. Simplify: $p \times p^6$

7. Simplify: $a^3 \times a^3 \times a^2$

8. Simplify: $3x^2 \times 2x^4$

9. Simplify: $5y^3 \times 4y^7$

10. Simplify: $a^2 \times b^3 \times a^4 \times b^5$

11. Simplify: $2p^3q \times 5p^2q^4$

12. Simplify: $4a^3 \times -2a^5$

13. Simplify: $-5p^2q \times -3pq^3$

14. Simplify: $(2x)^3$

15. Simplify: $(3y^4)^2$

16. Simplify: $(5a^2b^3)^3$

17. Simplify: $x^n \times x^2$

18. Simplify: $3p^n \times 5p^3$

19. Simplify: $2a^{n+1} \times 4a^{n-1}$

20. Simplify: $12y^4 \times \frac{3}{4}y^2$

21. Simplify: $(2x^2y)^3 \times 3xy^4$

22. Simplify: $5pq \times (2p^2q)^3$

23. Simplify: $5ab \times 2a^3c^2 \times -3b^4c$

24. Find the area of a rectangle with side lengths $4x^3$ and $5x^2y$.

25. Find the volume of a cuboid with side lengths $2a$, $3a^2b$, and $4ab^3$.