## Laws of Indices: Multiplying Terms

Write the following expressions in their simplest index form.

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

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

3. Write as a single power: (-2) imes (-2) imes (-2) imes (-2)

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

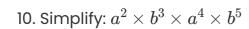
5. Simplify:  $x^2 imes x^3$ 

6. Simplify:  $p imes p^6$ 

7. Simplify:  $a^3 imes a^3 imes a^2$ 

8. Simplify:  $3x^2 imes 2x^4$ 

9. Simplify:  $5y^3 imes 4y^7$ 



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

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

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

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

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

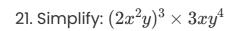


17. Simplify: 
$$x^n imes x^2$$

18. Simplify: 
$$3p^n imes 5p^3$$

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

20. Simplify: 
$$12y^4 imes rac{3}{4}y^2$$



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

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

## 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 $4ab^3$ .