

NAME: \_\_\_\_\_

Simplify using the Laws of Exponents.

1. $12^4 \cdot 12^6$ $12^{10}$	2. $4b^3 \cdot 3b^2 \cdot 2b$ $24b^6$	3. $8xy \cdot 6y^4$ $48xy^5$
4. $5n^7 \cdot 9n^6$ $45n^{13}$	5. $6m^9 \cdot 4m^3$ $24m^{12}$	6. $\frac{15a^5}{3a^2}$ $5a^3$
7. $\frac{n^{22}}{n^{18}}$ $n^4$	8. $\frac{21s^6t^4}{7st}$ $3s^5t^3$	9. $(5d^9)^2$ $5^2d^{18}$ $25d^{18}$
10. $\frac{s^{15}}{s^8}$ $s^7$	11. $\frac{36s^{12}}{4s^3}$ $9s^9$	12. $\frac{48n^7}{4n^3}$ $12n^4$
13. $\frac{18n^{10}}{2n^3}$ $9n^7$	14. $7n \cdot 5n^6$ $35n^7$	15. $(10m^4n^8)^2$ $10^2m^8n^{16}$ $100m^8n^{16}$

<p>16. <math>(2x^7)^3</math></p> $2^3 x^{21}$ $8x^{21}$	<p>17. <math>(3r^3s^8)^3</math></p> $3^3 r^9 s^{24}$ $27r^9s^{24}$	<p>18. <math>\frac{60n^{10}}{12n^7}</math></p> $5n^3$
<p>19. <math>(m^9n^8)^4</math></p> $m^{36} n^{32}$	<p>20. <math>-9x^4y \cdot 6y^6</math></p> $-54x^4y^7$	<p>21. <math>(3s^5t^6)^3</math></p> $3^3 s^{15} t^{18}$ $27s^{15}t^{18}$
<p>22. <math>-2k^4 \cdot 5k^3 \cdot 6k^5</math></p> $-60k^{12}$	<p>23. <math>(-8n^9)^2</math></p> $(-8)^2 n^{18}$ $64n^{18}$	
<p>24. <math>(x^7y^2z^5)^3</math></p> $x^{21} y^6 z^{15}$	<p>25. <math>(5x^4y^4)^2</math></p> $5^2 x^8 y^8$ $25x^8y^8$	