Exponent problems

1. $x^{6}x^{7}=x^{13}$
2. $\frac{y^{9}}{y^{4}}=y^{5}$
3. $(3y)^{2}=9y^{2}$
4. $\left(5^{15}5^{7}\right)^{0}=1$
5. $\left(\frac{x}{4}\right)^{5}=\frac{x^{5}}{4^{5}}$
6. $\left(y^{10}\right)^{20}=y^{200}$
7. $x^{12}∙x^{3}∙x^{2}=x^{17}$
8. $\left(4y^{2}\right)^{2}=16y^{4}$
9. $\left(\frac{x^{14}}{x^{12}}\right)^{4}=x^{8}$
10. $\frac{x^{5}y^{12}}{y^{9}x^{3}}=x^{2}y^{3}$
11. $y^{10}÷y^{3}$=$y^{7}$
12. $x^{8}×y^{8}=(xy)^{8}$
13. $y^{8}×y^{6}×y^{6}÷y^{15}=y^{5}$
14. $\left(\left(x^{10}\right)^{10}\right)^{10}=x^{1000}$
15. $\frac{4^{3}×y^{3}}{2^{3}}=8y^{3}$
16. $a^{2}a^{5}=a^{7}$
17. $\frac{b^{7}}{b^{4}}=b^{3}$
18. $(2a)^{2}=4a^{2}$
19. $\left(2^{3}b^{7}\right)^{0}=1$
20. $\left(\frac{3}{a}\right)^{4}=\frac{3^{4}}{a^{4}}$
21. $\left(b^{2}\right)^{3}=b^{6}$
22. $a^{2}∙a^{4}∙a^{20}=a^{26}$
23. $\left(3b^{2}\right)^{2}=9b^{4}$
24. $\left(\frac{a^{12}}{a^{8}}\right)^{2}=a^{8}$
25. $\frac{a^{5}b^{10}}{a^{3}b^{8}}=a^{2}b^{2}$
26. $b^{6}÷b^{4}$=$b^{2}$
27. $(2a)^{5}×3^{5}=(6a)^{5}$
28. $b^{4}×b^{5}×b^{6}÷b^{14}=b^{1}$
29. $\left(\left(a^{4}\right)^{5}\right)^{2}=a^{40}$
30. $\frac{9^{2}×a^{2}}{3^{2}}=9a^{2}$

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| $$x^{13}$$ | $$y^{5}$$ | $$9y^{2}$$ |
| $$1$$ | $$\frac{x^{5}}{4^{5}}$$ | $$y^{200}$$ |
| $$x^{17}$$ | $$16y^{4}$$ | $$x^{8}$$ |
| $$x^{2}y^{3}$$ | $$y^{7}$$ | $$(xy)^{8}$$ |
| $$y^{5}$$ | $$x^{1000}$$ | $$8y^{4}$$ |

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| --- | --- | --- |
| $$x^{6}x^{7}$$ | $$\frac{y^{9}}{y^{4}}$$ | $$(3y)^{2}$$ |
| $$\left(5^{15}5^{7}\right)^{0}$$ | $$\left(\frac{x}{4}\right)^{5}$$ | $$ \left(y^{10}\right)^{20}$$ |
| $$x^{12}∙x^{3}∙x^{2}$$ | $$\left(4y^{2}\right)^{2}$$ | $$\left(\frac{x^{14}}{x^{12}}\right)^{4}$$ |
| $$\frac{x^{5}y^{12}}{y^{9}x^{3}}$$ | $$y^{10}÷y^{3}$$ | $$x^{8}×y^{8}$$ |
| $$y^{8}∙y^{6}∙y^{6}÷y^{15}$$ | $$\left(\left(x^{10}\right)^{10}\right)^{10}$$ | $$\frac{4^{3}×y^{3}}{2^{3}}$$ |

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| $$a^{7}$$ | $$b^{3}$$ | $$4a^{2}$$ |
| $$1$$ | $$\frac{3^{4}}{a^{4}}$$ | $$b^{6}$$ |
| $$a^{26}$$ | $$9b^{4}$$ | $$a^{8}$$ |
| $$a^{2}b^{2}$$ | $$b^{2}$$ | $$(6a)^{5}$$ |
| $$b^{1}$$ | $$a^{40}$$ | $$9a^{2}$$ |

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| --- | --- | --- |
| $$a^{2}a^{5}$$ | $$\frac{b^{7}}{b^{4}}$$ | $$(2a)^{2}$$ |
| $$\left(2^{3}b^{7}\right)^{0}$$ | $$\left(\frac{3}{a}\right)^{4}$$ | $$\left(b^{2}\right)^{3}$$ |
| $$a^{2}∙a^{4}∙a^{20}$$ | $$\left(3b^{2}\right)^{2}$$ | $$\left(\frac{a^{12}}{a^{8}}\right)^{2}$$ |
| $$\frac{a^{5}b^{10}}{a^{3}b^{8}}$$ | $$b^{6}÷b^{4}$$ | $$(2a)^{5}×3^{5}$$ |
| $$b^{4}∙b^{5}∙b^{6}÷b^{14}$$ | $$\left(\left(a^{4}\right)^{5}\right)^{2}$$ | $$\frac{9^{2}×a^{2}}{3^{2}}$$ |