Laws of Exponents Worksheet

Simplify the following.

1. a3 x a-5
2. p x p4
3. a2 x a-3 x a4
4. (2b6)(b11)
5. (-9x4)(-6x3)
6. (3a3b)(4a2b7)
7. (3x2y)(4xy2)(-2x3y)
8. (3x4y3z2)(5x2y-4)
9. $\frac{x^{6}}{x^{2}} $
10. $\frac{x^{5}y^{8}}{xy^{2}}$
11. $\frac{a^{8}b^{12}c^{16}}{a^{4}b^{6}c^{4}}$
12. $\frac{9y^{-5}}{3y}$
13. 40x7y3 ÷ 8y3
14. $\frac{-18k^{4}j^{4}}{9j^{4}k^{2}}^{}$
15. (-24x6y12z10) ÷ (-3x2y6z2)
16. (15x4) ÷ (10x3)
17. (x2)3
18. (a3b-2)4
19. (3x4)2
20. (x4y3z3)3
21. (-3a4b2)3(-2a-3b)2
22. (-x4y-8)7
23. (-2xy7)2
24. (-76)11
25. (y2 x y4)2
26. $\left(\frac{x^{9}}{x^{3}}\right)^{2}$
27. $\frac{(-8x^{5}y^{3})(x^{4}y)}{12x^{6}}$
28. $\left(\frac{x^{5}×x^{2}}{x^{4}}\right)^{2}$