Exponent Rules and Simplification Practice Answers

1. $12x^7$
2. $\frac{1}{2}x^{-3}$
3. 1 Remember: anything to the power of $0 = 1$
4. nothing more can be done to simplify; $-9x^2$
5. $81x^2$
6. x^8y^4
7. x^6
8. $2x^{2/3-3/2} = 2x^{-5/2}$
9. $\frac{1}{2}x^{-6}y^{-16}$
10. $\frac{141}{25}b^{18}c^{-20}$
11. $-64b^{21}$
12. $\frac{1}{2}a^{-2}b^{-5}c^{-3}$
13. $9x^2 - 24x + 16$
14. $7x^{5/3} + 3x^{2/3} - x^{1/6}$
15. $5e^x - 1 + 3x^{-1} - 7x^{-7/4}$
16. $2x^{-1} - \frac{2}{7}x^{-1/2} + \frac{3}{7}e^x$
17. $4x^{-1/12} - 5x^{1/6} + 4x^{8/3}$
18. $(2x-3)^{-1}$
19. $16x - 24x^{7/2} + 9x^6$
20. $25 + 30x^{-1/2} + 9x^{-1}$
21. $\frac{1}{3}x^{-14/5} + \frac{1}{3}e^x + 2x^2$
22. $3x^{-1/10} + \frac{3}{2}x^{5/6} - 4x^{7/2}$
23. $\frac{3}{10}x^{5/2} - \frac{2}{5}x^{-13/6}$
24. $64x^{1/2} + 32x^{9/4} + 4x^4$
25. $3x^2 - 2x^{1/3} + \frac{1}{3}x^{-4/3}$
26. $9x^{-2} + 24x^{-1} + 16$
27. $3x^{4/3} - 2x^{5/6} + 6x^{1/3}$
28. $4x^4 + 36x^2 + 81$
29. $9x + 24x^{3/2} + 16x^2$
30. $4x - 2x^{4/3} + 5x^{7/3}$
31. $\frac{5}{2}x^2 + \frac{3}{2}x + \frac{5}{2} + \frac{3}{2}x^{-1}$
32. $2x^{-1/2} - 5x^{3/2}$
33. $6x^{4/3} - 8x^{1/3}$
34. $3x^{1/3} - x^{7/3}$
35. $4x^3 - x^{10/3}$
36. $5(3x+9)^{-1}$

37. (a) $x^{10}y^5$
    (b) x^7y
    (c) $x^{21}y^3$
    (d) $x^{21}y^3$
    (e) $x^{19}y$
    (f) This cannot be further simplified
    (g) $x^{-6}y^9z^{-2}$
    (h) $x^{18}y^{-27}z^6$
    (i) $x^{37}y^{-26}z^6$