

Practice B

For use with Pages 448-454

Evaluate the exponential expression.

1. 5^{-3}

2. $(\frac{1}{3})^{-1}$

3. $6(6^{-4})$

4. $-2^0 \cdot \frac{1}{4^{-2}}$

5. $3^5 \cdot 3^{-7}$

6. $7^3 \cdot 0^{-2}$

7. $10^{-2} \cdot 10^2$

8. $-2 \cdot (-2)^{-5}$

9. $(8^2)^{-1}$

10. $9^{-2} \cdot 12^0$

11. $(-4^{-3})^{-1}$

12. $1 \cdot 1^{-8}$

Rewrite the expression with positive exponents.

13. $4x^{-2}$

14. $\frac{1}{3x^{-4}}$

15. x^3y^{-6}

16. $7x^{-5}y^{-1}$

17. $\frac{1}{11x^{-2}y^{-7}}$

18. $(-12)^0y^{-2}$

19. $(9x)^{-4}$

20. $(2x^3y^{-8})^{-3}$

21. $(2^{-1}x^{-10})^7$

22. $\frac{15}{5y^{-3}}$

23. $\frac{1}{(8x^2)^{-3}}$

24. $(\frac{-12x^{-5}}{4x^{-5}})^{-4}$

25. Complete the table.

x	-2	-1	0	1	2
$y = (-2)^x$					

26. **Endangered Species** Between 1990 and 2000, the population of an endangered species decreased at a rate of 0.1% per year. The population P in year t is given by $P = 1200(0.999)^t$, where $t = 0$ corresponds to 1995. Find the population of the species in 1990, 1995, 2000, and the projected population in 2010.

	1990 ($t = -5$)	1995 ($t = 0$)	2000 ($t = 5$)	2010 ($t = 15$)
$P = 1200(0.999)^t$				

27. **Town Population** Between 1960 and 1990, the population of a town increased at a rate of 0.34% per year. The population P in year t is given by $P = 2000(1.0034)^t$, where $t = 0$ corresponds to 1980. Find the population of the town in 1960, 1970, 1980, and 1990.

	1960 ($t = -20$)	1970 ($t = -10$)	1980 ($t = 0$)	1990 ($t = 10$)
$P = 2000(1.0034)^t$				