DIVIDING POWERS WITH THE SAME BASE Simplify the expression. Write your answer as a power. (See Example 1.)

12. $\dfrac{8^9}{8^7}$

▶ **13.** $\dfrac{6^{10}}{6^4}$

14. $\dfrac{3^4}{3^1}$

15. $\dfrac{4^5}{4^3}$

16. $\dfrac{64^4}{64^3}$

17. $\dfrac{17^5}{17^2}$

18. $\dfrac{72^8}{72^6}$

19. $\dfrac{29^{11}}{29^7}$

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20. YOU BE THE TEACHER Your friend simplifies the quotient. Is your friend correct? Explain your reasoning.

$$\dfrac{6^{15}}{6^5} = 6^{15/5}$$
$$= 6^3$$

SIMPLIFYING AN EXPRESSION Simplify the expression. Write your answer as a power.
(See Example 2.)

▶ **21.** $\dfrac{6^{13}}{6^4 \cdot 6^2}$

22. $\dfrac{7^5 \cdot 7^3}{7^2}$
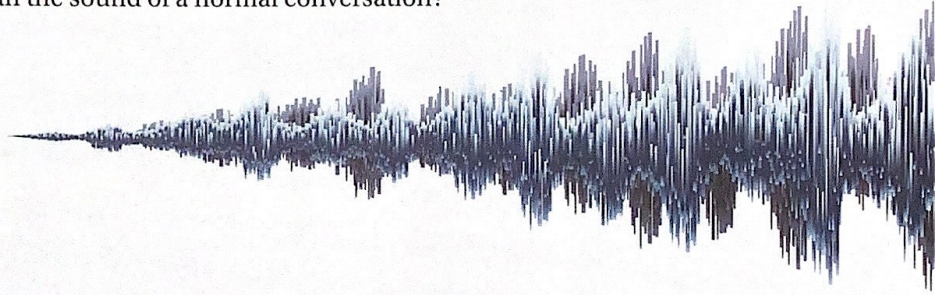
23. $\dfrac{8^{11}}{8^7 \cdot 8^2}$

24. $\dfrac{9^{30}}{9^{18} \cdot 9^4}$

25. $\dfrac{5^{22}}{5^8 \cdot 5^9}$

26. $\dfrac{11^8 \cdot 11^6}{11^8}$

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27. MODELING REAL LIFE The sound intensity of a normal conversation is 10^6 times greater than the quietest noise a person can hear. The sound intensity of a jet at takeoff is 10^{14} times greater than the quietest noise a person can hear. How many times more intense is the sound of a jet at takeoff than the sound of a normal conversation?

SIMPLIFYING AN EXPRESSION Simplify the expression. Write your answer as a power.
(See Example 3.)

28. $\dfrac{4^8 \cdot 4^3}{4^4 \cdot 4^2}$

▶**29.** $\dfrac{3^2 \cdot 3^6}{3^2} \cdot \dfrac{3^5}{3}$

30. $\dfrac{6^2}{6} \cdot \dfrac{6^{12}}{6^8}$

31. $\dfrac{7^7 \cdot 7^6}{7 \cdot 7^2}$

32. $\dfrac{8^5}{8^4} \cdot \dfrac{8^{13}}{8^8}$

33. $\dfrac{9^8 \cdot 9^2}{9^7} \cdot \dfrac{9^4}{9} \cdot \dfrac{9^7}{9^2}$

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34. PATTERNS The storage capacities and prices of five devices are shown in the table.

a. How many times more storage does Device D have than Device B?

Device	Storage (GB)	Price
A	2^5	$30
B	2^6	$50
C	2^7	$70
D	2^8	$90
E	2^9	$110

b. Predict the price for a device with 2^{12} GB of storage.