Practice 1.4

Simplify each expression. Write your answer in exponential notation.

1. $5^4 \cdot 6^4$ 30^4

2. $5.4^3 \cdot 4.5^3$ 24.3^3

3. $2^5 \cdot 10^5$ 20^5

4. $a^3 \cdot b^3$ $(ab)^3$

5. $(2x)^5 \cdot (3y)^5$ $(6xy)^5$

6. $(2.5a)^6 \cdot (1.6b)^6$ $(4ab)^6$

7. $\left(-\frac{1}{3}\right)^4 \cdot \left(-\frac{2}{5}\right)^4$ $\left(\frac{2}{15}\right)^4$

25. *Math Journal* Charles thinks that $a^3 \cdot b^3 = ab^6$. Is he correct? Why?

Charles is wrong.
$a^3 \cdot b^3 \stackrel{?}{=} ab^6$
$(ab)^3 \neq ab^6$

23. $\frac{24^9}{4^3 \cdot 6^2 \cdot 4^6}$ 6^7

24. $\frac{9^{12}}{(3^3)^3 \cdot 3^3}$ 3^{12}

Solve. Show your work.

26. At the beginning of January, Mr. Howard gives his niece $1 to start a savings account. For each month that she can triple the amount in the account, Mr. Howard will double the amount in the account at the end of each month. How much does Mr. Howard's niece have in her account at the beginning of May? $1,296