Practice 1.3

Simplify each expression. Write your answer in exponential notation.

1. $(2^6)^2$ 2^{12}
2. $(3^4)^3$ 3^{12}
3. $(10^5)^4$ 10^{20}
4. $(10^7)^2$ 10^{14}
5. $(25^3)^3$ 25^9
6. $(x^6)^3$ x^{18}
7. $\left[\left(\frac{1}{8}\right)^3\right]^6$ $\left(\frac{1}{8}\right)^{18}$
8. $\left[\left(\frac{4}{5}\right)^2\right]^4$ $\left(\frac{4}{5}\right)^8$
9. $[(2y)^3]^8$ $(2y)^{24}$
10. $[(57p)^4]^4$ $(57p)^{16}$
11. $[(-6)^4]^3$ 6^{12}
12. $[(-p)^2]^{11}$ p^{22}
13. *Math Journal* Michael thinks that $(a^3)^2 = a^5$. Is he correct? Why?

Michael is wrong.

$(a^3)^2 \stackrel{?}{=} a^5$

$a^{3 \cdot 2} \stackrel{?}{=} a^5$

$a^6 \neq a^5$

$(a^3)^2 = a^{3+2}$

$= a^5$