21. $(2ab)^5$ **22.** $(2x^3y)^6$

23. $(3m^7)^4 \cdot m^3$ **24.** $4p^2 \cdot (3p^5)^2$

Find the missing exponent.

25. $x^6 \cdot x^? = x^{12}$ **26.** $(x^4)^? = x^{12}$ **27.** $(3z^?)^3 = 27z^{18}$

28. **Newspaper Circulation** In 1996, the newspaper circulation in the country of Algeria was approximately 10^3 times the newspaper circulation in the country of Mauritania. The newspaper circulation in Mauritania was 10^3. What was the newspaper circulation in Algeria?

29. **Metric System** The metric system has names for very large weights.

     a. One gigaton is 10^2 times the weight of a hectaton. One hectaton is 10^2 ton. Write one gigaton in tons.

     b. One teraton is 10^9 times the weight of a kiloton. One kiloton is 10^3 ton. Write one teraton in tons.

     c. One exaton is 10^6 times the weight of a teraton. Use your answer to part (b) to write one exaton in tons.

30. **Wall Mural** You are designing a wall mural that will be composed of squares of different sizes. One of the requirements of your design is that the side length of each square is itself a perfect square.

     a. If you represent the side length of a square as x^2, write an expression for the area of a mural square.

     b. Find the area of a mural square when $x = 5$.

     c. Find the area of a mural square when $x = 10$.