Word Problems with Exponents

Name: _____ Date: _____

Read each problem carefully. Write your answer using exponent notation first, then calculate the final answer.

1. A bacteria colony doubles every hour. If you start with 2 bacteria, how many bacteria will there be after 6 hours?

Exponent form: _____

Final answer: _____ bacteria

2. A piece of paper is folded in half 5 times. How many layers of paper are there after all the folds?

Exponent form: _____

Final answer: _____ layers

3. A chess tournament has 3 rounds. In each round, the number of matches triples. If there are 3 matches in the first round, how many matches are there in total after 3 rounds?

Exponent form: _____

Final answer: _____ matches

4. A savings account earns interest so that the amount doubles every 10 years. If you start with $500, how much will you have after 40 years?

Exponent form: _____

Final answer: $_____

5. A pyramid of boxes has 4 boxes on each side of the bottom layer. If there are 4 layers stacked up, how many boxes are on the bottom layer in total?

Exponent form: _____

Final answer: _____ boxes

6. A social media post is shared 5 times, and each of those people shares it 5 times. This happens for 3 levels of sharing. How many total shares happen at the third level?

Exponent form: _____

Final answer: _____ shares

7. A cube has edges that are 7 cm long. What is the volume of the cube? (Volume = length × width × height)

Exponent form: _____

Final answer: _____ cm^3

8. A computer programme runs a calculation 10 times faster each generation. If it starts taking 10 seconds, how long will it take after 4 generations of improvement?

Exponent form: _____

Final answer: _____ seconds