Aksum Math

Name: _____

Powers of 10

Date: _____

Numbers & Patterns · Grade 5

Score: _____ / 10

★ Hard · 10 Questions

Solve each problem. Show your work in the space provided. Write your answer on the line.

1. Express 0.001 as a power of 10.

Answer: _____

2. Find n: $10^n = 100{,}000$

Answer: _____

3. What is 3.7×10^5?

Answer: _____

4. What is $8{,}000 \div 10^2$?

Answer: _____

5. How many times larger is 10^5 than 10^2?

Answer: _____

6. Write 250,000 in the form $a \times 10^n$ where a has one digit before the decimal.

Answer: _____

7. What is 0.04×10^3?

Answer: _____

8. Compare 10^4 and 10^5. Which is larger and by how many times?

Answer: _____

9. Find n: $5 \times 10^n = 500{,}000$

Answer: _____

10. What is $10^4 \div 10^2$?

Answer: _____

Answer Key Powers of 10 — Hard

1. 10^{-3}

$0.001 = 1/1000 = 1/10^3 = 10^{-3}$.

2. 5

100,000 has 5 zeros, so n=5.

3. 370,000

Multiply by 100,000: shift decimal 5 places right. 3.7 → 370,000.

4. 80

Divide by 100: 8,000 → 80 (shift decimal 2 places left).

5. 1,000 times

$10^5 \div 10^2 = 10^3 = 1{,}000$.

6. 2.5×10^5

Move decimal to get 2.5; that's 5 places right of 250000.0, so n=5.

7. 40

Shift decimal 3 places right: 0.04 → 40.

8. 10^5 is 10 times larger

$10^5 / 10^4 = 10$. So 10^5 is 10 times bigger.

9. 5

500,000 ÷ 5 = 100,000 = 10^5, so n=5.

10. 100

10,000 ÷ 100 = 100. Or: $10^{4-2} = 10^2 = 100$.