

Grade 5 · Place Value and Powers of 10 · Worksheet

Common Core 5.NBT.A.1, 5.NBT.A.2 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

These 26 problems practice how places relate to each other (5.NBT.A.1) and how to write, read and use powers of 10 (5.NBT.A.2). They start with place-value pictures and finish with word problems.

Work from top to bottom, draw a place-value chart whenever digits need to move, and check that each answer is larger or smaller in the way it should be.

Grade 5 Common Core: 5.NBT.A.1 · 5.NBT.A.2

Problem 1: Comparing two 6s

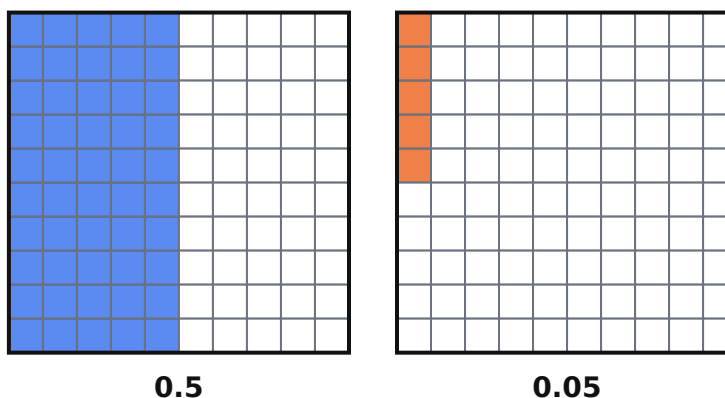
Look at the number 6,600. Find how many times as much the left 6 is worth as the right 6.

Thousands	Hundreds	Tens	Ones
6	6	0	0

The number 6,600 in a place-value chart.

Problem 2: Tenths and hundredths

The two grids show 0.5 and 0.05. Find how many times as much 0.5 is as 0.05.



Fifty squares compared with five squares.

Problem 3: One tenth and ten times

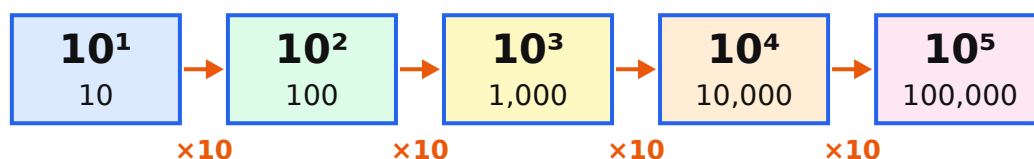
- a. Find $\frac{1}{10}$ of 0.3.
- b. Find $\frac{1}{10}$ of 40.
- c. Find 10 times 0.07.

Problem 4: Times 10 and divided by 10

- a. Find 10×8.5 .
- b. Find $8.5 \div 10$.
- c. Find 10×0.062 .
- d. Find $62 \div 10$.

Problem 5: Reading the power-of-10 picture

Use the figure to answer each part.



Powers of 10 and their values.

- a. Find the value of 10^3 .
- b. Write 10,000 as a power of 10.
- c. Find the value of 10^5 .

Problem 6: Writing powers of 10

- a. Write $10 \times 10 \times 10$ as a power of 10.
- b. Write 1,000,000 as a power of 10.
- c. Write 10 as a power of 10.

Problem 7: Evaluating powers of 10

- a. Find 10^2 .
- b. Find 10^4 .
- c. Find 10^7 .

Problem 8: Counting zeros

- a. How many zeros are in the value of 10^9 ? Write the number.
- b. A number is 1 followed by 5 zeros. Write it as a power of 10.

Problem 9: Multiplying by 10, 100 and 1,000

Find each product.

- a. 6.3×10
- b. 6.3×100
- c. $6.3 \times 1,000$

Problem 10: Shifting digits left

The chart shows 3.45. Find 3.45×10^2 .

Hundreds	Tens	Ones	tenths	hundredths
Number: 3.45				
		3	4	5

Each digit will move two places left.

Problem 11: Decimals times powers of 10

- a. 0.48×10^2
- b. 0.048×10^3
- c. 7.5×10^3
- d. 0.9×10^1

Problem 12: Dividing 530 by powers of 10

- a. $530 \div 10$
- b. $530 \div 10^2$
- c. $530 \div 10^3$

Problem 13: Shifting digits right

The chart shows 520. Find $520 \div 10^2$.

Hundreds	Tens	Ones	tenths	hundredths
Number: 520				
5	2	0		

Each digit will move two places right.

Problem 14: Decimals divided by powers of 10

- a. $4.7 \div 10$
- b. $36 \div 10^2$
- c. $0.8 \div 10$
- d. $5 \div 10^3$

Problem 15: Missing exponent in multiplication

Find the exponent that makes each equation true.

- a. $4.2 \times 10^? = 4,200$
- b. $0.75 \times 10^? = 75$
- c. $6 \times 10^? = 600,000$

Problem 16: Missing exponent in division

Find the exponent that makes each equation true.

- a. $9,000 \div 10^? = 9$
- b. $560 \div 10^? = 0.56$
- c. $31 \div 10^? = 3.1$

Problem 17: Power-of-10 patterns

Write the next two numbers in each pattern.

- a. 0.004, 0.04, 0.4, ?, ?
- b. 2,000, 200, 20, ?, ?

Problem 18: Which is greater?

- a. Compare 10×0.36 and $0.36 \div 10$. Which is greater?
- b. Compare 0.5×10^3 and 5.2×10^2 . Which is greater?

Problem 19: Find the error

Liam writes $2.5 \times 100 = 2.500$. Explain his mistake and give the correct product.

Problem 20: Explain with place value

Explain why $8 \div 10^2 = 0.08$ using place value.

Problem 21: School store pencils

The school store packs pencils in boxes of 10^2 . Mr. Lee orders 37 boxes. Find how many pencils he orders.

Problem 22: Running laps

Maya runs laps on a track that is 0.65 mile around. She runs 10 laps. Find the total distance.

Problem 23: Stack of paper

One sheet of paper is 0.004 inch thick. Find the height of a stack of 10^3 sheets.

Problem 24: Honey at the farmers market

Ethan sells 10^2 jars of honey for \$6.40 each. He puts the money into 10^1 equal envelopes. Find how much money is in each envelope.

Problem 25: Beads for bracelets

Priya buys 10^3 beads for a craft fair. Each bead costs \$0.07. She splits the cost equally with 9 friends, so 10 people pay equal parts. Find each person's share.

Problem 26: Juice jugs

A juice company fills 10^3 jugs with 0.75 gallon each. All the juice is then poured into 10^2 equal tanks. Find the number of gallons in each tank.