

# Grade 5 · Place Value and Powers of 10 · Test Answer Key

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

Use this key to score the test out of 20 points. Each solution shows the working, the final answer in bold and a short scoring guide so partial credit is easy to give. Accept equivalent answers such as  $10^4$  or 10,000 where both forms are asked.

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

### Question 1: Place value relationships (2 points)

(a) The left 7 is 700 and the right 7 is 70.  $700 \div 70 = 10$ . **10 times as much.**

(b) 70 is  $\frac{1}{10}$  of 700.  $\frac{1}{10}$

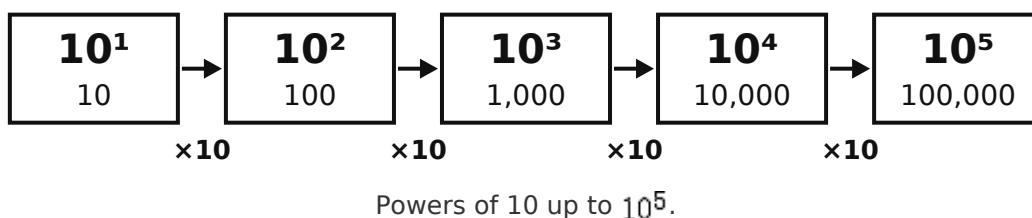
Scoring: 1 point for each correct part.

### Question 2: Powers of 10 (2 points)

(a) Four factors of 10:  $10^4 = 10,000$ . **10,000**

(b)  $10^6 = 1,000,000$ . **1,000,000**

Scoring: 1 point for each part. In part (a) both the exponent and the value are needed for the point.



### Question 3: Multiplying decimals (2 points)

(a)  $5.6 \times 100 = 560$ . **560**

(b)  $0.047 \times 1,000 = 47$ . **47**

Scoring: 1 point for each correct product.

#### Question 4: Dividing by powers of 10 (2 points)

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(a)  $3,400 \div 100 = 34$ . **34**

(b)  $6 \div 1,000 = 0.006$ . **0.006**

Scoring: 1 point for each correct quotient.

#### Question 5: Missing exponents (2 points)

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(a) 7.1 becomes 7,100 after 3 places left: 3.

(b) 25 becomes 0.025 after 3 places right: 3.

Scoring: 1 point for each correct exponent.

#### Question 6: Complete the table (2 points)

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a:  $0.52 \times 10 = 5.2$ . b:  $0.52 \times 1,000 = 520$ . c:  $0.52 \div 10 = 0.052$ . d:  $0.52 \div 100 = 0.0052$ .

**a = 5.2, b = 520, c = 0.052, d = 0.0052**

Scoring: 1 point if a and b are both correct; 1 point if c and d are both correct.

#### Question 7: Check Noah's work (3 points)

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(a)  $4.06 \times 100 = 406$ . **406**

(b) Multiplying by  $10^2$  moves each digit 2 places left, not 1. The 4 moves from ones to hundreds, the 0 to tens and the 6 to ones. Noah moved the digits only 1 place, which is multiplying by 10.

| Hundreds                  | Tens | Ones | tenths | hundredths |
|---------------------------|------|------|--------|------------|
| Start: 4.06               |      |      |        |            |
|                           |      | 4    | 0      | 6          |
| After $\times 10^2$ : 406 |      |      |        |            |
| 4                         | 0    | 6    |        |            |

The digits of 4.06 move two places left to make 406.

Scoring: 1 point for 406. 2 points for part (b): 1 for saying the digits move 2 places (or the exponent is 2), 1 for connecting Noah's answer to multiplying by 10 only.

### Question 8: Raffle tickets (3 points)

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(a)  $2.50 \times 10^2 = 250$ . **\$250**

(b)  $250 \div 10 = 25$ . **\$25 per class**

*Scoring: (a) 1 point for using 100 tickets, 1 point for \$250. (b) 1 point for \$25 (follow-through allowed from a wrong total).*

### Question 9: Digits in 7.77 (2 points)

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(a) Tenths 7 is 0.7 and hundredths 7 is 0.07. **0.7 and 0.07**

(b)  $0.07 \times 10 = 0.7$ . **10 times as much**

*Scoring: 1 point for each part.*

|                  |
|------------------|
| <b>Total</b>     |
| <b>20 points</b> |