Name _____ Date _____

Place Value and Powers of 10: Ten Times as Much, One Tenth as Much

Directions: A digit's value depends on its place. One place to the left, a digit is worth 10 times as much, and one place to the right, it is worth 1/10 as much. An exponent tells how many 10s to multiply: 10^2 means 10×10, which is 100.

1. Look at the two 7s in 7,740. The 7 in the thousands place is worth how many times as much as the 7 in the hundreds place?

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2. In 0.66, how does the value of the 6 in the hundredths place compare with the value of the 6 in the tenths place?

A. It is the same.
B. It is 1/10 as much.
C. It is 10 times as much.
D. It is 1/100 as much.

3. In 2.4, the digit 4 is worth 4 tenths. In which number is the digit 4 worth 10 times as much?

A. 0.24
B. 2.04
C. 4.2
D. 40.2

4. In 3.5, the digit 5 is worth 0.5. What is the digit 5 worth in 3.05? Type a decimal.

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5. Which number is equal to 10^3?

A. 300
B. 1,000
C. 10,000
D. 30

6. Find 38×10^3. Type your answer with digits only, without a comma.

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7. Two students find 3.5×10.

- Aiden says to add a zero at the end, so he writes 3.50.
- Noemi says each digit moves one place to the left, so she writes 35.

Who has the right product, and why?

A. Noemi, because the 3 ones become 3 tens and the 5 tenths become 5 ones.
B. Both, because 3.50 and 35 are equal.
C. Aiden, because multiplying by 10 always puts one zero at the end of a number.

8. What is $52.6 \div 10$?

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9. Divide 6.2 by 100. Which number is the quotient?

A. 0.62 B. 0.0062 C. 620 D. 0.062

10. Which expressions are equal to 4,500? Select the two that equal 4,500.

☐ A. 4.5×10^3 ☐ B. 0.45×10^2 ☐ C. 45×10^3

☐ D. 450×100 ☐ E. 45×100