

Decimal Place Value

Name: _____

Date: _____

Score: _____ / 24

Q Quick Review

Every digit in a number has a **place value**. To the right of the decimal point, the places are **tenths**, **hundredths**, and **thousandths** — each place is 10 times smaller than the one before it. In 3.475, the 4 is in the tenths place (worth 0.4), the 7 is in the hundredths place (worth 0.07), and the 5 is in the thousandths place (worth 0.005). The **value** of a digit is the digit multiplied by its place. You can also write a decimal in **expanded form** by adding up the value of each digit.

◇ **Example:** What is the value of the digit 7 in 3.475?

⇒ First, name the place. Counting to the right of the decimal point: the first place is tenths, and the second place is hundredths. The 7 sits in the *second* place, so it is in the hundredths place. Its value is the digit times its place: $7 \times \frac{1}{100} = \frac{7}{100}$, which is 0.07.

Answer: 0.07 (hundredths)

PRACTICE

Find the place value or the value of the underlined digit as described.

- | | | | |
|----------------------------|-------|-----------------------------|-------|
| 1. Place of the 4 in 2.4 | _____ | 11. Value of the 8 in 2.08 | _____ |
| 2. Place of the 6 in 5.06 | _____ | 12. Value of the 6 in 9.236 | _____ |
| 3. Place of the 3 in 1.003 | _____ | 13. Value of the 5 in 3.51 | _____ |
| 4. Place of the 8 in 0.8 | _____ | 14. Value of the 9 in 0.094 | _____ |
| 5. Place of the 9 in 4.29 | _____ | 15. Value of the 2 in 7.812 | _____ |
| 6. Value of the 5 in 0.5 | _____ | 16. Place of the 1 in 0.071 | _____ |
| 7. Value of the 2 in 0.02 | _____ | 17. Value of the 7 in 0.74 | _____ |
| 8. Value of the 7 in 0.007 | _____ | 18. Expanded form of 0.36 | _____ |
| 9. Value of the 3 in 6.3 | _____ | 19. Expanded form of 0.524 | _____ |
| 10. Value of the 4 in 1.45 | _____ | 20. Value of the 3 in 0.835 | _____ |

◆ Word Problems

21. A runner's time is recorded as 12.485 seconds. In which place is the digit 8, and what is its value? _____
22. A scientist measures a sample as 0.067 gram. What is the value of the digit 7 in this measurement? _____
23. A price tag reads \$4.39. Write the cents part, 0.39, in expanded form. _____
24. A board game piece is 2.105 inches tall. Which digit is in the tenths place, and what is its value? _____



Answer Keys

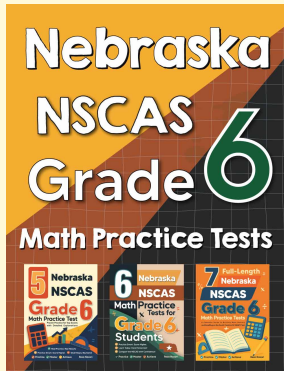
- | | |
|----------------|----------------------------------|
| 1. tenths | 13. 0.5 |
| 2. hundredths | 14. 0.09 |
| 3. thousandths | 15. 0.002 |
| 4. tenths | 16. thousandths |
| 5. hundredths | 17. 0.7 |
| 6. 0.5 | 18. $0.3 + 0.06$ |
| 7. 0.02 | 19. $0.5 + 0.02 + 0.004$ |
| 8. 0.007 | 20. 0.03 |
| 9. 0.3 | 21. Hundredths place; value 0.08 |
| 10. 0.4 | 22. 0.007 (thousandths) |
| 11. 0.08 | 23. $0.3 + 0.09$ |
| 12. 0.006 | 24. The digit 1; value 0.1 |

Step-by-Step Explanations

- | | |
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| <p>1. The first spot after the decimal point is the tenths place.</p> <p>2. The second spot after the decimal point is the hundredths place.</p> <p>3. The third spot after the decimal point is the thousandths place.</p> <p>4. The 8 is one spot right of the decimal, so it is tenths.</p> <p>5. The 9 is two spots right of the decimal, so it is hundredths.</p> <p>6. The 5 is in the tenths place, so its value is 0.5.</p> <p>7. The 2 is in the hundredths place, so its value is 0.02.</p> <p>8. The 7 is in the thousandths place, so its value is 0.007.</p> <p>9. The 3 is in the tenths place, so its value is 0.3.</p> <p>10. The 4 is in the tenths place, so its value is 0.4.</p> <p>11. The 8 is in the hundredths place, so its value is 0.08.</p> <p>12. The 6 is in the thousandths place, so its value is 0.006.</p> <p>13. The 5 is in the tenths place, so its value is 0.5.</p> <p>14. The 9 is in the hundredths place, so its value is 0.09.</p> | <p>15. The 2 is in the thousandths place, so its value is 0.002.</p> <p>16. The 1 is three spots right of the decimal, so it is thousandths.</p> <p>17. The 7 is in the tenths place, so its value is 0.7.</p> <p>18. Tenths value 0.3 plus hundredths value 0.06 gives $0.3 + 0.06$.</p> <p>19. Add the value of each digit: $0.5 + 0.02 + 0.004$.</p> <p>20. The 3 is in the hundredths place, so its value is 0.03.</p> <p>21. Counting right of the decimal: tenths, then hundredths. The 8 is in the hundredths place, worth 0.08.</p> <p>22. The 7 is three places right of the decimal point, in the thousandths place, so its value is 0.007 gram.</p> <p>23. The 3 is worth 0.3 (tenths) and the 9 is worth 0.09 (hundredths), so $0.39 = 0.3 + 0.09$.</p> <p>24. The first place right of the decimal is tenths. The digit there is 1, so its value is 0.1 inch.</p> |
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