

Understanding Place Value Relationships

Name: _____

Date: _____

Score: _____ / 24

Q Quick Review

In a multi-digit number, every digit has a **place value**. As you move one place to the **left**, the value gets 10 times bigger. As you move one place to the **right**, the value gets 10 times smaller. So in 4,400, the first 4 is worth 4,000 and the second 4 is worth 400 — and 4,000 is 10 times 400. The **value** of a digit is the digit times its place. In 3,728, the 7 is in the hundreds place, so its value is $7 \times 100 = 700$.

◇ **Example:** In the number 5,500, how many times greater is the value of the 5 in the thousands place than the 5 in the hundreds place?

⇒ Let's find each value first. The 5 in the thousands place is worth 5,000, and the 5 in the hundreds place is worth 500. Now we compare them. Think: 500 times what equals 5,000? Since $500 \times 10 = 5,000$, the thousands 5 is 10 times greater. That makes sense — moving one place to the left always means 10 times bigger.

Answer: 10 times greater

PRACTICE

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

- | | | | |
|------------------------------|-------|---|-------|
| 1. Value of the 6 in 627 | _____ | 12. 30,000 is ___ times 3,000 | _____ |
| 2. Value of the 3 in 1,300 | _____ | 13. What is 10×80 ? | _____ |
| 3. Value of the 8 in 8,142 | _____ | 14. What is 10×600 ? | _____ |
| 4. Value of the 7 in 4,706 | _____ | 15. What is $10 \times 4,000$? | _____ |
| 5. Value of the 2 in 25,000 | _____ | 16. What is $9,000 \div 10$? | _____ |
| 6. Value of the 9 in 90,431 | _____ | 17. In 7,770, how many times the hundreds 7 is the thousands 7? | _____ |
| 7. Value of the 5 in 350,000 | _____ | 18. In 2,200, how many times the tens 0 aside, compare the 2s | _____ |
| 8. Value of the 4 in 426,108 | _____ | 19. Value of the 1 in 184,000 | _____ |
| 9. 40 is ___ times 4 | _____ | 20. Value of the 6 in 560,312 | _____ |
| 10. 700 is ___ times 70 | _____ | | |
| 11. 6,000 is ___ times 600 | _____ | | |

◆ Word Problems

21. Maya wrote the number 3,300 on the board. Her teacher asked how many times greater the value of the 3 in the thousands place is than the 3 in the hundreds place. What should Maya say? _____
22. A baseball stadium can seat 40,000 fans. A small park can seat 4,000 fans. How many times more people can the stadium hold than the small park? _____
23. Liam is saving for a bike. He has \$600 in his savings account. The bike he wants costs 10 times that much. How much does the bike cost? _____
24. In the number 8,825, Noah points to the 8 in the thousands place and the 8 in the hundreds place. What is the value of each 8? _____



Answer Keys

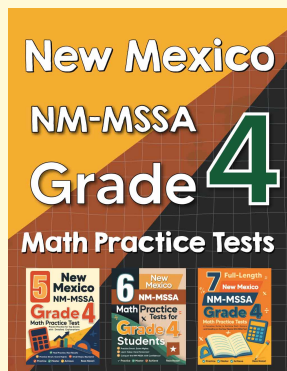
- | | |
|------------|----------------------|
| 1. 600 | 13. 800 |
| 2. 300 | 14. 6,000 |
| 3. 8,000 | 15. 40,000 |
| 4. 700 | 16. 900 |
| 5. 20,000 | 17. 10 |
| 6. 90,000 | 18. 10 |
| 7. 50,000 | 19. 100,000 |
| 8. 400,000 | 20. 60,000 |
| 9. 10 | 21. 10 times greater |
| 10. 10 | 22. 10 times more |
| 11. 10 | 23. \$6,000 |
| 12. 10 | 24. 8,000 and 800 |

Step-by-Step Explanations

- | | |
|---|---|
| <p>1. The 6 sits in the hundreds place, so its value is $6 \times 100 = 600$.</p> <p>2. The 3 is in the hundreds place, so it is worth $3 \times 100 = 300$.</p> <p>3. The 8 is in the thousands place, so its value is $8 \times 1,000 = 8,000$.</p> <p>4. The 7 is in the hundreds place, so it is worth 700.</p> <p>5. The 2 is in the ten thousands place, so its value is $2 \times 10,000 = 20,000$.</p> <p>6. The 9 is in the ten thousands place, so it is worth 90,000.</p> <p>7. The 5 sits in the ten thousands place, so its value is 50,000.</p> <p>8. The 4 is in the hundred thousands place, so it is worth 400,000.</p> <p>9. Moving one place left makes a digit 10 times bigger, and $4 \times 10 = 40$.</p> <p>10. Each place to the left is 10 times larger, and $70 \times 10 = 700$.</p> <p>11. $600 \times 10 = 6,000$, so it is 10 times greater.</p> <p>12. $3,000 \times 10 = 30,000$, so the answer is 10 times.</p> <p>13. Multiplying by 10 shifts the digit one place left, so $10 \times 80 = 800$.</p> <p>14. $10 \times 600 = 6,000$ — just add one zero when you multiply by 10.</p> | <p>15. $10 \times 4,000 = 40,000$, ten times bigger.</p> <p>16. Dividing by 10 moves each digit one place right, so $9,000 \div 10 = 900$.</p> <p>17. The thousands 7 is worth 7,000 and the hundreds 7 is worth 700; $700 \times 10 = 7,000$.</p> <p>18. The thousands 2 is 2,000 and the hundreds 2 is 200; $200 \times 10 = 2,000$, so 10 times.</p> <p>19. The 1 is in the hundred thousands place, so its value is 100,000.</p> <p>20. The 6 sits in the ten thousands place, so it is worth 60,000.</p> <p>21. The thousands 3 is worth 3,000 and the hundreds 3 is worth 300. Since $300 \times 10 = 3,000$, it is 10 times greater.</p> <p>22. We need $4,000 \times ? = 40,000$. Since $4,000 \times 10 = 40,000$, the stadium holds 10 times more people.</p> <p>23. To find 10 times \$600, multiply: $10 \times 600 = 6,000$. The bike costs \$6,000.</p> <p>24. The 8 in the thousands place is worth $8 \times 1,000 = 8,000$, and the 8 in the hundreds place is worth $8 \times 100 = 800$.</p> |
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