

# Comparing and Ordering Decimals

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Q Quick Review

To compare decimals, line up the decimal points and compare digit by digit from **left to right**. Start with the whole-number part, then the tenths, then the hundredths, and so on — the first place where the digits differ decides which number is larger. It helps to **add zeros** so the decimals have the same number of places: 0.5 is the same as 0.50. Use  $<$ ,  $>$ , or  $=$  to record the comparison. To **order** a list, compare them in pairs and arrange from least to greatest (or greatest to least).

◇ **Example:** Compare 0.5 and 0.45 using  $<$ ,  $>$ , or  $=$ .

⇒ Give both decimals the same number of places by writing 0.5 as 0.50. Now compare from the left. The tenths digits are 5 and 4 — and 5 is greater than 4, so we already have our answer; we do not even need the hundredths. Therefore  $0.50 > 0.45$ , which means  $0.5 > 0.45$ .

**Answer:**  $0.5 > 0.45$

## PRACTICE

Compare with  $<$ ,  $>$ , or  $=$ . For ordering items, list from least to greatest.

- |                          |       |                            |       |
|--------------------------|-------|----------------------------|-------|
| 1. $0.5 \square 0.45$    | _____ | 11. $0.6 \square 0.59$     | _____ |
| 2. $0.7 \square 0.70$    | _____ | 12. $3.14 \square 3.141$   | _____ |
| 3. $0.3 \square 0.30$    | _____ | 13. $0.25 \square 0.250$   | _____ |
| 4. $0.62 \square 0.6$    | _____ | 14. $0.4 \square 0.04$     | _____ |
| 5. $0.8 \square 0.85$    | _____ | 15. $5.6 \square 5.60$     | _____ |
| 6. $0.19 \square 0.2$    | _____ | 16. $0.78 \square 0.8$     | _____ |
| 7. $1.4 \square 1.40$    | _____ | 17. Order: 0.3, 0.13, 0.31 | _____ |
| 8. $0.09 \square 0.1$    | _____ | 18. Order: 0.6, 0.06, 0.66 | _____ |
| 9. $2.5 \square 2.05$    | _____ | 19. Order: 1.2, 1.02, 1.22 | _____ |
| 10. $0.333 \square 0.33$ | _____ | 20. Order: 0.5, 0.45, 0.54 | _____ |

## ◆ Word Problems

21. In a race, Maya finished in 9.8 seconds and Zoe finished in 9.75 seconds. Who was faster? \_\_\_\_\_
22. Three ribbons measure 0.6 m, 0.56 m, and 0.65 m. List the lengths from shortest to longest. \_\_\_\_\_
23. A store has two bags of nuts weighing 1.25 lb and 1.3 lb. Which bag is heavier? \_\_\_\_\_
24. Three students measured a pencil as 0.18 m, 0.108 m, and 0.18 m. Are any two measurements equal, and which is smallest? \_\_\_\_\_



## Answer Keys

- |                             |  |
|-----------------------------|--|
| 1. <input type="radio"/> >  | 13. <input type="radio"/> =  |
| 2. <input type="radio"/> =  | 14. <input type="radio"/> >  |
| 3. <input type="radio"/> =  | 15. <input type="radio"/> =  |
| 4. <input type="radio"/> >  | 16. <input type="radio"/> <  |
| 5. <input type="radio"/> <  | 17. <input type="text" value="0.13, 0.3, 0.31"/>                               |
| 6. <input type="radio"/> <  | 18. <input type="text" value="0.06, 0.6, 0.66"/>                               |
| 7. <input type="radio"/> =  | 19. <input type="text" value="1.02, 1.2, 1.22"/>                               |
| 8. <input type="radio"/> <  | 20. <input type="text" value="0.45, 0.5, 0.54"/>                               |
| 9. <input type="radio"/> >  | 21. <input type="text" value="Zoe (9.75 &lt; 9.8)"/>                           |
| 10. <input type="radio"/> > | 22. <input type="text" value="0.56 m, 0.6 m, 0.65 m"/>                         |
| 11. <input type="radio"/> > | 23. <input type="text" value="The 1.3 lb bag"/>                                |
| 12. <input type="radio"/> < | 24. <input type="text" value="The two 0.18 m are equal; 0.108 m is smallest"/> |

### Step-by-Step Explanations

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|--|---|
| <p>1. As 0.50 vs. 0.45, the tenths <math>5 &gt; 4</math>, so <math>0.5 &gt; 0.45</math>.</p> <p>2. 0.7 and 0.70 name the same amount, so they are equal.</p> <p>3. Adding a zero does not change the value: <math>0.3 = 0.30</math>.</p> <p>4. As 0.62 vs. 0.60, the hundredths <math>2 &gt; 0</math>, so <math>0.62 &gt; 0.6</math>.</p> <p>5. As 0.80 vs. 0.85, the hundredths <math>0 &lt; 5</math>, so <math>0.8 &lt; 0.85</math>.</p> <p>6. As 0.19 vs. 0.20, the tenths <math>1 &lt; 2</math>, so <math>0.19 &lt; 0.2</math>.</p> <p>7. 1.4 and 1.40 are the same number, so they are equal.</p> <p>8. As 0.09 vs. 0.10, the tenths <math>0 &lt; 1</math>, so <math>0.09 &lt; 0.1</math>.</p> <p>9. The tenths digits are 5 and 0, and <math>5 &gt; 0</math>, so <math>2.5 &gt; 2.05</math>.</p> <p>10. As 0.333 vs. 0.330, the thousandths <math>3 &gt; 0</math>, so <math>0.333 &gt; 0.33</math>.</p> <p>11. As 0.60 vs. 0.59, the tenths <math>6 &gt; 5</math>, so <math>0.6 &gt; 0.59</math>.</p> <p>12. As 3.140 vs. 3.141, the thousandths <math>0 &lt; 1</math>, so <math>3.14 &lt; 3.141</math>.</p> <p>13. The trailing zero adds nothing: <math>0.25 = 0.250</math>.</p> <p>14. The tenths digits are 4 and 0, and <math>4 &gt; 0</math>, so <math>0.4 &gt; 0.04</math>.</p> | <p>15. 5.6 and 5.60 name the same value, so they are equal.</p> <p>16. As 0.78 vs. 0.80, the tenths <math>7 &lt; 8</math>, so <math>0.78 &lt; 0.8</math>.</p> <p>17. Compare tenths: 0.13 has 1, 0.3 and 0.31 have 3; then <math>0.30 &lt; 0.31</math>. Order: 0.13, 0.3, 0.31.</p> <p>18. Tenths: 0.06 has 0, then <math>0.60 &lt; 0.66</math>. Order: 0.06, 0.6, 0.66.</p> <p>19. Tenths: 1.02 has 0, then <math>1.20 &lt; 1.22</math>. Order: 1.02, 1.2, 1.22.</p> <p>20. As hundredths: <math>0.45 &lt; 0.50 &lt; 0.54</math>. Order: 0.45, 0.5, 0.54.</p> <p>21. As 9.75 vs. 9.80, compare hundredths: <math>5 &lt; 0</math>? No — compare tenths first: <math>7 &lt; 8</math>, so <math>9.75 &lt; 9.8</math>. Zoe's smaller time means she was faster.</p> <p>22. Write all as hundredths: <math>0.56 &lt; 0.60 &lt; 0.65</math>, so the order is 0.56 m, 0.6 m, 0.65 m.</p> <p>23. As 1.25 vs. 1.30, compare tenths: <math>2 &lt; 3</math>, so <math>1.25 &lt; 1.3</math>. The 1.3 lb bag is heavier.</p> <p>24. <math>0.18 = 0.180</math>, so the two 0.18 measurements match. Comparing 0.180 and 0.108, the hundredths <math>8 &gt; 0</math>, so 0.108 is the smallest.</p> |
|--|---|



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