

# Decimal Operations

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

## Q Quick Review

When you **add or subtract** decimals, line up the decimal points so place values match, then add zeros if needed to even out the digits. When you **multiply** decimals, ignore the points at first, multiply like whole numbers, then count the total decimal places in both factors and put that many in the answer. When you **divide** by a decimal, slide the decimal point in the divisor to make it a whole number, and slide the dividend's point the same number of places. Always estimate to check your answer makes sense.

◇ **Example:** Find  $4.8 \div 0.6$ .

⇒ Dividing by a decimal feels tricky, so first make the divisor a whole number. The divisor is 0.6 — slide its decimal point one place right to get 6. We must slide the dividend's point the same one place, so 4.8 becomes 48. Now the problem is the friendly  $48 \div 6$ , which is 8. A quick check:  $8 \times 0.6 = 4.8$ , so 8 is correct.

**Answer:** 8

## PRACTICE

Compute. Write each answer as a decimal.

- |                      |       |                       |       |
|----------------------|-------|-----------------------|-------|
| 1. $3.6 + 4.75$      | _____ | 11. $0.25 \times 8$   | _____ |
| 2. $5.25 + 3.8$      | _____ | 12. $1.5 \times 1.5$  | _____ |
| 3. $3.75 + 6.5$      | _____ | 13. $0.9 \times 0.07$ | _____ |
| 4. $12.4 - 7.85$     | _____ | 14. $0.45 \times 0.2$ | _____ |
| 5. $9.1 - 2.36$      | _____ | 15. $2.4 \times 3.5$  | _____ |
| 6. $8.06 - 3.9$      | _____ | 16. $4.8 \div 0.6$    | _____ |
| 7. $15.6 - 9.84$     | _____ | 17. $7.2 \div 0.9$    | _____ |
| 8. $10 - 2.375$      | _____ | 18. $6.4 \div 0.8$    | _____ |
| 9. $0.6 \times 0.4$  | _____ | 19. $12.5 \div 2.5$   | _____ |
| 10. $2.5 \times 1.2$ | _____ | 20. $0.144 \div 0.12$ | _____ |

## ◆ Word Problems

21. Maya pays with a \$20 bill for 3 smoothies that cost \$4.85 each. How much change does she get? \_\_\_\_\_
22. A roll of wire is 12 meters long. Each meter weighs 0.85 kilogram. What is the total weight of the roll? \_\_\_\_\_
23. A gardener has 23.7 liters of plant food and uses 0.3 liter on each plant. How many plants can be fed? \_\_\_\_\_
24. Liam buys items costing \$6.25, \$4.80, and \$3.95. What is the total cost? \_\_\_\_\_



## Answer Keys

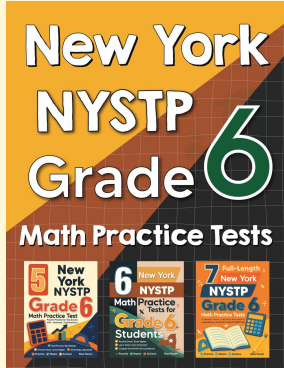
- |                                       |                                            |
|---------------------------------------|--------------------------------------------|
| 1. <input type="text" value="8.35"/>  | 13. <input type="text" value="0.063"/>     |
| 2. <input type="text" value="9.05"/>  | 14. <input type="text" value="0.09"/>      |
| 3. <input type="text" value="10.25"/> | 15. <input type="text" value="8.4"/>       |
| 4. <input type="text" value="4.55"/>  | 16. <input type="text" value="8"/>         |
| 5. <input type="text" value="6.74"/>  | 17. <input type="text" value="8"/>         |
| 6. <input type="text" value="4.16"/>  | 18. <input type="text" value="8"/>         |
| 7. <input type="text" value="5.76"/>  | 19. <input type="text" value="5"/>         |
| 8. <input type="text" value="7.625"/> | 20. <input type="text" value="1.2"/>       |
| 9. <input type="text" value="0.24"/>  | 21. <input type="text" value="\$5.45"/>    |
| 10. <input type="text" value="3"/>    | 22. <input type="text" value="10.2 kg"/>   |
| 11. <input type="text" value="2"/>    | 23. <input type="text" value="79 plants"/> |
| 12. <input type="text" value="2.25"/> | 24. <input type="text" value="\$15.00"/>   |

### Step-by-Step Explanations

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| <p>1. Line up the points and add: <math>3.60 + 4.75 = 8.35</math>.</p> <p>2. Line up the points: <math>5.25 + 3.80 = 9.05</math>.</p> <p>3. <math>3.75 + 6.50 = 10.25</math> when the points are lined up.</p> <p>4. Write <math>12.40 - 7.85</math> and subtract to get 4.55.</p> <p>5. <math>9.10 - 2.36 = 6.74</math> with the points aligned.</p> <p>6. <math>8.06 - 3.90 = 4.16</math>.</p> <p>7. <math>15.60 - 9.84 = 5.76</math>.</p> <p>8. Think of 10 as 10.000, then subtract: <math>10.000 - 2.375 = 7.625</math>.</p> <p>9. <math>6 \times 4 = 24</math>, and with two decimal places total the answer is 0.24.</p> <p>10. <math>25 \times 12 = 300</math>; two decimal places gives <math>3.00 = 3</math>.</p> <p>11. <math>25 \times 8 = 200</math>; two decimal places gives <math>2.00 = 2</math>.</p> <p>12. <math>15 \times 15 = 225</math>; two decimal places gives 2.25.</p> | <p>13. <math>9 \times 7 = 63</math>; three decimal places gives 0.063.</p> <p>14. <math>45 \times 2 = 90</math>; three decimal places gives <math>0.090 = 0.09</math>.</p> <p>15. <math>24 \times 35 = 840</math>; two decimal places gives <math>8.40 = 8.4</math>.</p> <p>16. Slide both points one place: <math>48 \div 6 = 8</math>.</p> <p>17. Slide both points one place: <math>72 \div 9 = 8</math>.</p> <p>18. Slide both points one place: <math>64 \div 8 = 8</math>.</p> <p>19. Slide both points one place: <math>125 \div 25 = 5</math>.</p> <p>20. Slide both points two places: <math>14.4 \div 12 = 1.2</math>.</p> <p>21. First find the cost: <math>3 \times 4.85 = 14.55</math>. Then the change is <math>20 - 14.55 = \\$5.45</math>.</p> <p>22. Multiply length by weight per meter: <math>0.85 \times 12 = 10.2</math> kilograms.</p> <p>23. <math>23.7 \div 0.3</math>: slide both points one place to get <math>237 \div 3 = 79</math> plants.</p> <p>24. Add the three prices with points aligned: <math>6.25 + 4.80 + 3.95 = \\$15.00</math>.</p> |
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