

Multiplication of Decimals by Powers of Ten

EXAMPLE

Write the problem in vertical form.
Then multiply. Remember the decimal point.
 $2.63 \times 10 =$

$$\begin{array}{r} 2.63 \\ \times 10 \\ \hline 26.30 \end{array}$$

Directions Rewrite the following problems in vertical form and multiply.

- | | |
|-----------------------------------|-------------------------------------|
| 1. $6.25 \times 10 =$ _____ | 24. $0.028 \times 10 =$ _____ |
| 2. $5.638 \times 10 =$ _____ | 25. $0.002 \times 1,000 =$ _____ |
| 3. $0.06 \times 100 =$ _____ | 26. $1.1 \times 1,000 =$ _____ |
| 4. $0.072 \times 100 =$ _____ | 27. $10 \times 1.67 =$ _____ |
| 5. $1.061 \times 10 =$ _____ | 28. $1,000 \times 0.003 =$ _____ |
| 6. $5.63 \times 100 =$ _____ | 29. $100 \times 0.1505 =$ _____ |
| 7. $3.14 \times 100 =$ _____ | 30. $10 \times 1.688 =$ _____ |
| 8. $1.414 \times 1,000 =$ _____ | 31. $1,000 \times 3.9 =$ _____ |
| 9. $0.00627 \times 1,000 =$ _____ | 32. $100 \times 3.702 =$ _____ |
| 10. $0.2802 \times 10 =$ _____ | 33. $10 \times 0.1 =$ _____ |
| 11. $0.0605 \times 100 =$ _____ | 34. $1,000 \times 0.11 =$ _____ |
| 12. $0.7701 \times 100 =$ _____ | 35. $3.44 \times 100 =$ _____ |
| 13. $1.101 \times 1,000 =$ _____ | 36. $1.112 \times 1,000 =$ _____ |
| 14. $7.6 \times 100 =$ _____ | 37. $0.00232 \times 10,000 =$ _____ |
| 15. $5.1 \times 1,000 =$ _____ | 38. $0.012 \times 10,000 =$ _____ |
| 16. $8.81 \times 10,000 =$ _____ | 39. $3.033 \times 10 =$ _____ |
| 17. $3.7 \times 10,000 =$ _____ | 40. $8.014 \times 1,000 =$ _____ |
| 18. $2.05 \times 10,000 =$ _____ | 41. $0.0556 \times 10,000 =$ _____ |
| 19. $0.0001 \times 1,000 =$ _____ | 42. $5.5 \times 100 =$ _____ |
| 20. $5.6 \times 100 =$ _____ | 43. $0.6709 \times 100 =$ _____ |
| 21. $69.1 \times 1,000 =$ _____ | 44. $0.0021 \times 1,000 =$ _____ |
| 22. $0.777 \times 1,000 =$ _____ | 45. $23.1 \times 100 =$ _____ |
| 23. $0.201 \times 10,000 =$ _____ | |

Scientific Notation with Positive Exponents

EXAMPLE

Write in scientific notation.

$$2,300,000 = 2.3 \times 10^6$$

↑ ↖
a number a power of ten
between one and ten

Directions Rewrite the following numbers using scientific notation.

- | | |
|---|--|
| <p>1. 4,200 = _____</p> <p>2. 6,250 = _____</p> <p>3. 82,100 = _____</p> <p>4. 50,000 = _____</p> <p>5. 72,300 = _____</p> <p>6. 15,080 = _____</p> <p>7. 1,800 = _____</p> <p>8. 29,000 = _____</p> <p>9. 500,000 = _____</p> <p>10. 600,000 = _____</p> <p>11. 700,000,000 = _____</p> <p>12. 7,800,000 = _____</p> <p>13. 10,000 = _____</p> <p>14. 35,600 = _____</p> <p>15. 81.52 = _____</p> <p>16. 17.63 = _____</p> <p>17. 236.5 = _____</p> <p>18. 3,800 = _____</p> <p>19. 19,000 = _____</p> <p>20. 16.12 = _____</p> <p>21. 610,000,000 = _____</p> <p>22. 400,000,000 = _____</p> <p>23. 790,000 = _____</p> | <p>24. 25.33 = _____</p> <p>25. 1,420,000 = _____</p> <p>26. 1,000,000,000 = _____</p> <p>27. 34,000,000 = _____</p> <p>28. 103,000 = _____</p> <p>29. 23,000 = _____</p> <p>30. 450,000,000 = _____</p> <p>31. 11,000 = _____</p> <p>32. 401,300 = _____</p> <p>33. 311,400 = _____</p> <p>34. 102.3 = _____</p> <p>35. 927,000 = _____</p> <p>36. 211,400 = _____</p> <p>37. 100,000 = _____</p> <p>38. 10,000 = _____</p> <p>39. 344,000,000,000 = _____</p> <p>40. 42,000,000,000 = _____</p> <p>41. 12,000,000 = _____</p> <p>42. 41,000,000 = _____</p> <p>43. 764,200,000 = _____</p> <p>44. 911,400,000 = _____</p> <p>45. 102,000 = _____</p> |
|---|--|

Scientific Notation with Negative Exponents

EXAMPLE

Write in scientific notation.

$$0.006 = 6 \times 10^{-3}$$

↑ ↖
a number a negative exponent
between one a power of ten
and ten

Directions Rewrite the following numbers using scientific notation.

- | | |
|------------------------|---------------------------|
| 1. 0.008 = _____ | 24. 0.00093 = _____ |
| 2. 0.0715 = _____ | 25. 0.000000004 = _____ |
| 3. 0.0062 = _____ | 26. 0.00000000062 = _____ |
| 4. 0.0007 = _____ | 27. 0.423 = _____ |
| 5. 0.02 = _____ | 28. 0.00316 = _____ |
| 6. 0.0321 = _____ | 29. 0.005071 = _____ |
| 7. 0.0805 = _____ | 30. 0.000078 = _____ |
| 8. 0.0006 = _____ | 31. 0.002103 = _____ |
| 9. 0.00005 = _____ | 32. 0.0000000005 = _____ |
| 10. 0.03051 = _____ | 33. 0.00000123 = _____ |
| 11. 0.00091 = _____ | 34. 0.00203 = _____ |
| 12. 0.0000007 = _____ | 35. 0.000222 = _____ |
| 13. 0.000003 = _____ | 36. 0.0121 = _____ |
| 14. 0.00000021 = _____ | 37. 0.10203 = _____ |
| 15. 0.0061 = _____ | 38. 0.000204 = _____ |
| 16. 0.00054 = _____ | 39. 0.0691 = _____ |
| 17. 0.000003 = _____ | 40. 0.0000203 = _____ |
| 18. 0.00101 = _____ | 41. 0.0000000304 = _____ |
| 19. 0.000005 = _____ | 42. 0.3044 = _____ |
| 20. 0.000052 = _____ | 43. 0.00077 = _____ |
| 21. 0.000735 = _____ | 44. 0.002058 = _____ |
| 22. 0.0001433 = _____ | 45. 0.0004058 = _____ |
| 23. 0.00021 = _____ | |

Decimal Operations

EXAMPLES

Add.

$$\begin{array}{r} 2.5 \\ + 5.48 \\ \hline 7.98 \end{array}$$

Subtract.

$$\begin{array}{r} 5.910 \\ - 0.92 \\ \hline 5.08 \end{array}$$

Multiply.

$$\begin{array}{r} 3.1 \\ \times .8 \\ \hline 2.48 \end{array}$$

Divide.

$$\begin{array}{r} .435 \\ 8 \overline{)3.480} \\ \underline{-32} \\ 28 \\ \underline{-24} \\ 40 \\ \underline{-40} \end{array}$$

Directions Add.

1. $5.2 + 4 + 56 =$ _____

2. $4.6 + 1 + 0.9 =$ _____

3. $3.9 + 5 + 0.09 =$ _____

4. $3.45 + 7 + 0.9 + 1 =$ _____

5. $82.4 + 4 + 0.077 =$ _____

6. $41.4 + 56 + 0.005 =$ _____

7. $4.5 + 1.1 + 4 =$ _____

8. $7 + 0.77 + 2 =$ _____

Directions Subtract.

9. $3 - 2.7 =$ _____

10. $7 - 0.56 =$ _____

11. $12 - 0.03 =$ _____

12. $42.1 - 0.99 =$ _____

13. $0.208 - 0.0999 =$ _____

14. $1 - 0.055 =$ _____

15. $5.1 - 3.56 =$ _____

16. $6 - 4.77 =$ _____

Directions Multiply.

17. $2.3 \times 3.4 =$ _____

18. $3.4 \times 3.4 =$ _____

19. $0.112 \times 0.03 =$ _____

20. $77 \times 0.04 =$ _____

21. $5.6 \times 0.33 =$ _____

22. $45 \times 6.2 =$ _____

23. $0.21 \times 5.8 =$ _____

24. $2.09 \times 0.44 =$ _____

Directions Divide.

25. $80 \div 3.2 =$ _____

26. $1.092 \div 7.8 =$ _____

27. $42.9 \div 78 =$ _____

28. $24.44 \div 5.2 =$ _____

29. $7.392 \div 0.88 =$ _____

30. $112 \div 11.2 =$ _____



Decimals to Fractions

EXAMPLE

Rename 0.8 as a fraction. Simplify if necessary.

$$0.8 = \frac{8}{10} = \frac{4}{5}$$

Directions Rewrite each decimal as a fraction or mixed number.

Simplify the answers to the lowest terms.

- | | | | | | |
|------------|-------|-------------|-------|-------------|-------|
| 1. 0.34 | _____ | 21. 0.23 | _____ | 41. 0.12 | _____ |
| 2. 0.02 | _____ | 22. 0.26 | _____ | 42. 0.0045 | _____ |
| 3. 0.27 | _____ | 23. 0.99 | _____ | 43. 0.208 | _____ |
| 4. 5.34 | _____ | 24. 0.234 | _____ | 44. 0.71 | _____ |
| 5. 2.355 | _____ | 25. 1.08 | _____ | 45. 0.112 | _____ |
| 6. 0.0034 | _____ | 26. 2.088 | _____ | 46. 0.029 | _____ |
| 7. 0.0045 | _____ | 27. 0.8 | _____ | 47. 0.0021 | _____ |
| 8. 7.012 | _____ | 28. 12.25 | _____ | 48. 0.015 | _____ |
| 9. 1.22 | _____ | 29. 5.25 | _____ | 49. 0.0075 | _____ |
| 10. 2.755 | _____ | 30. 0.00223 | _____ | 50. 0.010 | _____ |
| 11. 0.0454 | _____ | 31. 5.0038 | _____ | 51. 0.0155 | _____ |
| 12. 0.011 | _____ | 32. 1.5 | _____ | 52. 2.75 | _____ |
| 13. 0.001 | _____ | 33. 0.1 | _____ | 53. 0.00075 | _____ |
| 14. 5.5 | _____ | 34. 3.035 | _____ | 54. 0.00005 | _____ |
| 15. 0.95 | _____ | 35. 10.55 | _____ | 55. 0.33 | _____ |
| 16. 1.456 | _____ | 36. 0.00221 | _____ | 56. 3.65 | _____ |
| 17. 7.55 | _____ | 37. 5.072 | _____ | 57. 0.00202 | _____ |
| 18. 9.098 | _____ | 38. 33.045 | _____ | 58. 0.0241 | _____ |
| 19. 0.0342 | _____ | 39. 1.0535 | _____ | 59. 0.0031 | _____ |
| 20. 1.85 | _____ | 40. 1.99 | _____ | 60. 0.0105 | _____ |