

Make the following conversions:

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|---------------|----------|---|--------------------------|
| 1. 4.56 cm | _____ mm | 32. 42.7 L | _____ ml |
| 2. 45 g | _____ mg | 33. 642 cg | _____ kg |
| 3. 0.0034 L | _____ ml | 34. 8.73×10^9 mg | _____ kg |
| 4. 451 m | _____ km | 35. 3.4 cm | _____ mg |
| 5. 0.067 cm | _____ dm | 36. 0.020 kJ | _____ J |
| 6. 0.34 km | _____ dm | 37. 1.24 g/L | _____ g/ml |
| 7. 1.05 km | _____ m | 38. 786 g/cm ³ | _____ g/mm ³ |
| 8. 0.84 mm | _____ m | 39. 1.54 kg/L | _____ g/ml |
| 9. 9.6 ml | _____ L | 40. 5.52 g/cm ³ | _____ kg/dm ³ |
| 10. 6.5 m | _____ mm | 41. 88.5 g/ml | _____ kg/ml |
| 11. 0.107 cg | _____ g | 42. 6.51 g/ml | _____ g/L |
| 12. 6150 ml | _____ kL | 43. 1.5 g/ml | _____ kg/L |
| 13. 83.38 g | _____ mg | 44. 2.4 g/ml | _____ mg/L |
| 14. 15.7 ms | _____ s | 45. 78.3 cm ³ | _____ dm ³ |
| 15. 0.095 kg | _____ cg | 46. 1.05 km ² | _____ m ² |
| 16. 87.7 L | _____ cl | 47. 15 cm ³ | _____ L |
| 17. 64.2 mg | _____ cg | 48. 0.060 cm ³ | _____ ml |
| 18. 0.0873 mg | _____ kg | 49. 45.3 m ² | _____ cm ² |
| 19. 9.84 g | _____ mg | 50. 0.0058 m ³ | _____ cm ³ |
| 20. 56.7 L | _____ ml | 51. 0.0407 dm ³ | _____ mm ³ |
| 21. 8.6 m | _____ cm | 52. 0.103 L | _____ cm ³ |
| 22. 32 mg | _____ g | 53. 0.62 g/ml | _____ g/L |
| 23. 0.260 L | _____ ml | 54. 0.370 g/mm ³ | _____ g/cm ³ |
| 24. 5.61 km | _____ mm | 55. 9.70 g/ml | _____ kg/L |
| 25. 0.044 km | _____ m | 56. 88 kg/dm ³ | _____ g/cm ³ |
| 26. 4.6 mg | _____ g | 57. 9.2 kg/ml | _____ g/ml |
| 27. 8.9 m | _____ dm | 58. 0.0710 g/L | _____ g/ml |
| 28. 0.107 g | _____ cg | 59. 12 kg/L | _____ g/ml |
| 29. 7.38 g | _____ kg | 60. 3,650 mg/L | _____ g/ml |
| 30. 6.7 s | _____ ms | 61. 1 ml is equal to how many cm ³ ? | |
| 31. 0.065 km | _____ dm | | |

1. 45.6 mm
2. 45000 mg
3. 3.4 ml
4. 0.451 km
5. 0.0067 dm
6. 3400 dm
7. 1050 m
8. 0.00084 m
9. 0.0096 L
10. 6500 mm
11. 0.00107 g
12. 0.00615 kL
13. 83380 mg
14. 0.0157 s
15. 9500 cg
16. 8770 cg
17. 6.42 cg
18. 0.0000000873 kg
19. 9840 mg
20. 56700 ml
21. 860 cm
22. 0.032 g
23. 260 ml
24. 5,610 m 5,610,000 mm
25. 44 m
26. 0.0046 g
27. 89 dm
28. 10.7 g
29. 0.00738 kg
30. 6,700 ms
31. 650 dm
32. 42,700 ml
33. 0.00642 kg
34. 8.73×10^3 kg
35. this conversion can not be done, since you can't convert a length to a mass
 - that would be like trying to change inches to pounds
36. 20. J (note the decimal point to indicate 2 sig figs)
37. $\left(\frac{1.24g}{1L}\right)\left(\frac{1L}{1000ml}\right) = 0.00124g/ml$
38. $\left(\frac{786g}{cm^3}\right)\left(\frac{1cm}{10mm}\right)\left(\frac{1cm}{10mm}\right)\left(\frac{1cm}{10mm}\right) = 0.786g/mm^3$
39. $\left(\frac{1.54kg}{1L}\right)\left(\frac{1L}{1000ml}\right)\left(\frac{1000g}{1kg}\right) = 1.54g/ml$
(In effect the unit changes cancel each other out.)
40. $\left(\frac{5.52g}{cm^3}\right)\left(\frac{1kg}{1000g}\right)\left(\frac{10cm}{1dm}\right)\left(\frac{10cm}{1dm}\right)\left(\frac{10cm}{1dm}\right) = 5.52kg/dm^3$
(Again, the unit changes cancel each other out.)
41. $\left(\frac{88.5g}{1ml}\right)\left(\frac{1kg}{1000g}\right) = 0.0885kg/ml$
42. $\left(\frac{6.51g}{1ml}\right)\left(\frac{1000ml}{1L}\right) = 6,510g/L$
43. $\left(\frac{1.5g}{1ml}\right)\left(\frac{1000ml}{1L}\right)\left(\frac{1kg}{1000g}\right) = 1.5kg/L$
(Again, the unit changes cancel each other out.)
44. $\left(\frac{2.4g}{1ml}\right)\left(\frac{1000mg}{1g}\right)\left(\frac{1000ml}{1L}\right) = 2,400,000mg/L$
45. 0.0783 dm³
 - Remember when changing cubed and squared units, you move the decimal point the appropriate number of places per the prefix change but $\times 2$ if squared units and $\times 3$ if cubed units.
46. 1,050,000 m²
47. 0.015 L Don't forget that 1 cm³ = 1 ml.
48. 0.060 ml
49. 453,000 cm²
50. 5800 cm³
51. 40,700 mm³
52. 103 cm³
53. $\left(\frac{0.62g}{1ml}\right)\left(\frac{1000ml}{1L}\right) = 620g/L$
54. $\left(\frac{0.370g}{mm^3}\right)\left(\frac{10mm}{1cm}\right)\left(\frac{10mm}{1cm}\right)\left(\frac{10mm}{1cm}\right) = 370.g/cm^3$
55. $\left(\frac{9.70g}{1ml}\right)\left(\frac{1kg}{1000g}\right)\left(\frac{1000ml}{1L}\right) = 9.70kg/L$
(In effect the unit changes cancel each other out.)
56. $\left(\frac{88kg}{dm^3}\right)\left(\frac{1000g}{1kg}\right)\left(\frac{1dm}{10cm}\right)\left(\frac{1dm}{10cm}\right)\left(\frac{1dm}{10cm}\right) = 88g/cm^3$
(Again, the unit changes cancel each other out.)
57. $\left(\frac{9.2kg}{1ml}\right)\left(\frac{1000g}{1kg}\right) = 9,200g/ml$
58. $\left(\frac{0.0710g}{1L}\right)\left(\frac{1L}{1000ml}\right) = 0.0000710g/ml$
59. $\left(\frac{12kg}{1L}\right)\left(\frac{1L}{1000ml}\right)\left(\frac{1000g}{1kg}\right) = 12g/ml$
(Again, the unit changes cancel each other out.)
60. $\left(\frac{3,650mg}{1L}\right)\left(\frac{1g}{1000mg}\right)\left(\frac{1L}{1000ml}\right) = 0.00365g/ml$
61. the same 1.0 cm³ ...memorize it.