Area and Volume Conversion Worksheet

Square and cubic metric units, hectares, litres and millilitres, with the squared and cubed factors

Level: Ages 11–15 · Grades 6–10 · Years 7–11

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Name _____ Class _____ Date _____ Score _____ / 20

Convert each quantity. Remember that an area factor is the length factor squared and a volume factor is the length factor cubed.

REFERENCE

1 cm^2 = 100 mm^2	1 m^2 = 10,000 cm^2	1 ha = 10,000 m^2	1 km^2 = 100 ha
1 cm^3 = 1000 mm^3	1 m^3 = 1,000,000 cm^3	1 cm^3 = 1 mL	1 m^3 = 1000 L

WORKED EXAMPLE

3.5 m^2 = ? cm^2 → 1 m = 100 cm, so 1 m^2 = 100 × 100 = 10,000 cm^2; 3.5 × 10,000 = 35,000 → **35,000 cm^2**

Part A: area

1. 60 m^2 = _____ cm^2

2. 41 cm^2 = _____ mm^2

3. 28,400 cm^2 = _____ m^2

4. 249.8 mm^2 = _____ cm^2

5. 25.5 ha = _____ m^2

6. 27,300 m^2 = _____ ha

7. 12.5 km^2 = _____ ha

8. 3.79 km^2 = _____ m^2

Part B: volume and capacity

9. 2.09 m^3 = _____ cm^3

10. 8.4 cm^3 = _____ mm^3

11. 111,500 cm^3 = _____ m^3

12. 4.8 m^3 = _____ L

13. 579.4 L = _____ m^3

14. 3590 cm^3 = _____ mL

15. 35 L = _____ cm^3

16. 3573 mm^3 = _____ cm^3

Part C: two steps (challenge)

17. 0.45 m^3 = _____ mL

18. 586,500 mm^2 = _____ m^2

19. 648,500 mL = _____ m^3

20. 0.92 ha = _____ cm^2

Every answer is exact. Answer key on page 2. More worksheets and the matching charts: allunitconversions.com/conversion-worksheets

Answer key — Area and Volume Conversion Worksheet

For teachers · remove before handing out

#	Question	Answer	Working
PART A: AREA			
1	60 m^2 → cm^2	**600,000 cm^2 = 6 × 10^5 cm^2**	60 × 10,000 = 600,000
2	41 cm^2 → mm^2	**4100 mm^2**	41 × 100 = 4100
3	28,400 cm^2 → m^2	**2.84 m^2**	28,400 ÷ 10,000 = 2.84
4	249.8 mm^2 → cm^2	**2.498 cm^2**	249.8 ÷ 100 = 2.498
5	25.5 ha → m^2	**255,000 m^2 = 2.55 × 10^5 m^2**	25.5 × 10,000 = 255,000
6	27,300 m^2 → ha	**2.73 ha**	27,300 ÷ 10,000 = 2.73
7	12.5 km^2 → ha	**1250 ha**	12.5 × 100 = 1250
8	3.79 km^2 → m^2	**3,790,000 m^2 = 3.79 × 10^6 m^2**	3.79 × 1,000,000 = 3,790,000
PART B: VOLUME AND CAPACITY			
9	2.09 m^3 → cm^3	**2,090,000 cm^3 = 2.09 × 10^6 cm^3**	2.09 × 1,000,000 = 2,090,000
10	8.4 cm^3 → mm^3	**8400 mm^3**	8.4 × 1000 = 8400
11	111,500 cm^3 → m^3	**0.1115 m^3**	111,500 ÷ 1,000,000 = 0.1115
12	4.8 m^3 → L	**4800 L**	4.8 × 1000 = 4800
13	579.4 L → m^3	**0.5794 m^3**	579.4 ÷ 1000 = 0.5794
14	3590 cm^3 → mL	**3590 mL**	3590 × 1 = 3590
15	35 L → cm^3	**35,000 cm^3**	35 × 1000 = 35,000
16	3573 mm^3 → cm^3	**3.573 cm^3**	3573 ÷ 1000 = 3.573
PART C: TWO STEPS (CHALLENGE)			
17	0.45 m^3 → mL	**450,000 mL = 4.5 × 10^5 mL**	0.45 × 1,000,000 = 450,000
18	586,500 mm^2 → m^2	**0.5865 m^2**	586,500 ÷ 1,000,000 = 0.5865
19	648,500 mL → m^3	**0.6485 m^3**	648,500 ÷ 1,000,000 = 0.6485
20	0.92 ha → cm^2	**92,000,000 cm^2 = 9.2 × 10^7 cm^2**	0.92 × 100,000,000 = 92,000,000

Teaching notes: common mistakes

- Using the length factor for an area: 1 m^2 is 10,000 cm^2, not 100 cm^2.
- Using the area factor for a volume: 1 m^3 is 1,000,000 cm^3, not 10,000 cm^3.
- Forgetting that a millilitre and a cubic centimetre are the same volume, and that 1 m^3 holds 1000 litres.

Every answer is exact. Every answer is calculated from the exact definitions and checked against the AllUnitConversions conversion engine before the PDF is produced. Matching reference chart: **allunitconversions.com/metric-conversion-chart**. Free to print, copy and share with attribution (CC BY 4.0).