

Student Text **UNIT 14 Volumes****Answers****14.1 Volumes of Cubes, Cuboids, Cylinders and Prisms**

1. (a) 125 cm^3 (b) 360 cm^3 (c) 8.96 m^3
 (d) 1005 mm^3 (to the nearest mm^3) (e) 2 m^3 (to the nearest m^3)
 (f) 1508 cm^3 (to the nearest cm^3) (g) 504 cm^3 (h) 144 cm^3
 (i) 2.4 m^3
2. (a) 0.25 m^3 (b) 0.20 m^3 (to the nearest m^3)
3. (a) 3.864 m^3 (b) 3.312 m^3
4. (a) 251327 cm^3 (b) 203.6 cm^3 , 2036 cm^3
 (c) 249291 cm^3 (to the nearest cm^3)
5. (a) 120 cm^3 (b) 105 cm^3
6. (a) 168 cm^3 (b) 45 cm^3 (c) 176 cm^3 (d) 1600 cm^3
7. (a) 1200 cm^3 (b) 130 cm^3
8. $20\,000 \text{ cm}^3$
9. 67.5 m^3
10. 15 m^3
11. 26 m^3 (to the nearest m^3)
12. (ii) 14 litres (13.56 litres)
13. (a) 462 cm^3 (to the nearest cm^3) (b) 3 cm
14. (a) 36.9 m^2 (b) 295.2 m^3 (c) 0.32 m
15. (a) 500 cm^3 (b) (i) 400 cm^3 (ii) 80%
 (c) (i) 42 cm^2 (ii) 9.5 cm (to the nearest mm)

14.2 Mass, Volume and Density

1. (a) 96 cm^3 (b) 88 cm^3 (c) 88 g
2. (a) 8000 cm^3 (b) 0.75 g/cm^3
3. 0.794 g/cm^3
4. (a) $402\,123.86 \text{ cm}^3$ (b) 402.124 kg

 denotes that the topic is not on the current CXC/CSEC Mathematics syllabus and therefore not examined, but is of relevance to the content of the Unit.

Student Text *UNIT 14 Volumes*

Answers

14.2

5. (a) 120 cm^3 (b) 2.5 g/cm^3 (c) 375 g (d) 1000 g (1 kg)
6. 80 g
7. (a) 60 m^3 (b) 60 000 kg (c) volume: 52 m^3 ; mass: 52 000 kg
8. (a) 6.28 cm^2 (to 2 d.p.) (b) 1414 g (c) 40 cm
9. (a) 4188.79 cm^3 (b) 0.048 g/cm^3 (c) 83 g (to the nearest g)
10. (a) 6 g/cm^3 (b) 89 cm

14.3 Volumes of Pyramids, Cones and Spheres

1. (a) 283 cm^3 (to the nearest cm^3) (b) 314 cm^3 (to the nearest cm^3)
 (c) 257 cm^3 (to the nearest cm^3) (d) 1.6 m^3 (to 1 d.p.)
 (e) 1018 cm^3 (to the nearest cm^3) (f) 2399 cm^3 (to the nearest cm^3)
 (g) 905 cm^3 (h) 262 cm^3 (to the nearest cm^3) (i) 500 cm^3 (j) 144 cm^3
2. $r = 6.08 \text{ cm}$ (to 2 d.p.)
3. $d = 3 \text{ cm}$ (to the nearest cm)
4. (a) 1131 cm^3 (to the nearest cm^3) (b) 1283 cm^3 (to the nearest cm^3)
 (c) 115 cm^3 (to the nearest cm^3) (d) 816 cm^3 (to the nearest cm^3)
5. 0.1 cm (to 1 d.p.)
6. 81.9 cm^3 (to the nearest cm^3)
7. 20.6 cm^3 (to 1 d.p.)
8. $V = 634 \text{ cm}^3$