ALBERTA MATH 20-3 · UNIT 1 · 25 QUESTIONS

Surface Area, Volume and Capacity — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **A closed cardboard box is 10 cm long, 6 cm wide and 4 cm high. The total surface area of the box is**

- A 248 cm²
- B 240 cm²
- C 124 cm²
- D 480 cm²

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2 **A storage tote is 12 m long, 5 m wide and 3 m high. The volume of the tote is**

- **A** 222 m^3
- **B** 90 m^3
- **C** 180 m^3
- **D** 20 m^3

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3 **A closed soup can is a cylinder with radius 3 cm and height 8 cm. Its total surface area, to the nearest tenth of a cm^2, is**

- **A** 150.8 cm^2
- **B** 207.3 cm^2
- **C** 226.2 cm^2
- **D** 527.8 cm^2

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4 **A cylindrical paint pail has radius 5 cm and height 10 cm. Its volume, to the nearest tenth of a cm³, is**

- **A** 3141.6 cm³
- **B** 314.2 cm³
- **C** 78.5 cm³
- **D** 785.4 cm³

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5 **A cone shaped pile of gravel has radius 6 m and height 9 m. Its volume, to the nearest tenth of a m³, is**

- **A** 339.3 m³
- **B** 1017.9 m³
- **C** 1357.2 m³
- **D** 169.6 m³

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6 **A spherical beach ball has radius 5 cm. Its volume, to the nearest tenth of a cm^3, is**

- **A** 314.2 cm^3
- **B** 261.8 cm^3
- **C** 523.6 cm^3
- **D** 4188.8 cm^3

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7 **The triangular end of a tent is shown. Its base is 8 m, its height is 6 m, and the tent is 10 m long. Its volume is**

- **A** 480 m^3
- **B** 24 m^3
- **C** 120 m^3
- **D** 240 m^3

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8 **A right triangular prism has triangular ends with legs 6 cm and 8 cm and hypotenuse 10 cm, and its length is 12 cm. Its total surface area is**

- A 288 cm^2
- B 336 cm^2
- C 48 cm^2
- D 384 cm^2

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9 **A square pyramid monument has a base side length of 10 m and a vertical height of 12 m. Its volume is**

- A 400 m^3
- B 1200 m^3
- C 100 m^3
- D 600 m^3

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10 **A triangular face of a square pyramid is shown. Its base is 6 cm and its slant height is 5 cm. The pyramid has a square base with side length 6 cm. Its total surface area is**

- A 36 cm²
- B 60 cm²
- C 66 cm²
- D 96 cm²

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11 **A recipe calls for 3.5 L of stock. This amount, in millilitres, is**

- A 350 mL
- B 35 mL
- C 3500 mL
- D 35000 mL

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12 **A truck fuel tank holds 20 US gallons. Use 1 US gallon = 3.785 L. The capacity of the tank is**

- **A** 5.3 L
- **B** 75.7 L
- **C** 378.5 L
- **D** 90.9 L

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13 **A cooler has a volume of 2 ft^3. This volume, in in^3, is**

- **A** 3456 in^3
- **B** 288 in^3
- **C** 24 in^3
- **D** 6912 in^3

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14 **A painter will paint only the four walls of a room that is 5 m long, 4 m wide and 3 m high. The total wall area is**

- **A** 20 m²
- **B** 30 m²
- **C** 60 m²
- **D** 54 m²

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15 **The graph shows the volume of concrete poured for a slab over time. Concrete costs $180 per m³. The cost of the concrete poured is**

- **A** $4320
- **B** $324
- **C** $648
- **D** $1296

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16 **A raised garden box is 2 m long, 1 m wide and 0.4 m deep. The volume of soil needed to fill it, in litres, is**

- A 80 L
- B 800 L
- C 8000 L
- D 400 L

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17 **The graph shows the volume of water in a tank as it fills. How many litres are in the tank after 3 hours?**

- A 942 L
- B 3770 L
- C 471 L
- D 9425 L

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18 **A shipping box measures 60 cm by 40 cm by 40 cm. How many cubes with side length 20 cm fit exactly inside it?**

- A 8
- B 6
- C 24
- D 12

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19 **A farm silo is a cylinder with radius 2 m and height 6 m topped by a cone with the same radius and a height of 3 m. The total volume, to the nearest tenth of a m³, is**

- A 75.4 m³
- B 113.1 m³
- C 88.0 m³
- D 37.7 m³

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20 **An open top wooden crate is 8 ft long, 5 ft wide and 4 ft high. The surface area of wood, counting the bottom and four sides only, is**

- A 184 ft²
- B 144 ft²
- C 160 ft²
- D 104 ft²

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21 **A playground ball is a sphere with radius 5 cm. Its surface area, to the nearest tenth of a cm², is**

- A 314.2 cm²
- B 78.5 cm²
- C 523.6 cm²
- D 1256.6 cm²

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22 **A cone shaped party hat has radius 3 cm and slant height 5 cm. Its total surface area, including the circular base, to the nearest tenth, is**

- A 47.1 cm²
- B 28.3 cm²
- C 66.0 cm²
- D 75.4 cm²

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23 **A soup recipe uses 3 quarts of broth. Use 1 quart = 2 pints. This amount, in pints, is**

- A 6 pints
- B 1.5 pints
- C 12 pints
- D 3 pints

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24 **The graph shows the volume of grain loaded into a storage bin over time. What is the volume of grain in the bin after 3 days?**

- **A** 7 ft^3
- **B** 12 ft^3
- **C** 32 ft^3
- **D** 24 ft^3

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25 **A hemispherical mixing bowl has radius 6 cm. Its volume, to the nearest tenth of a cm^3, is**

- **A** 904.8 cm^3
- **B** 339.3 cm^3
- **C** 452.4 cm^3
- **D** 226.2 cm^3

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ANSWER KEY

1. A
2. C
3. B
4. D
5. A
6. C
7. D
8. B
9. A
10. D
11. C
12. B
13. A
14. D
15. C
16. B
17. A
18. D
19. C
20. B
21. A
22. D
23. A
24. B
25. C

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