

# Measurement & Geometry Assessment

ACMMG242 (E)



Name: \_\_\_\_\_

Score: \_\_\_\_\_

Teacher: \_\_\_\_\_



Assessment



Navigator



Student



30 min

Q.1. A rectangular box 8 cm x 12 cm x 5 cm has volume:

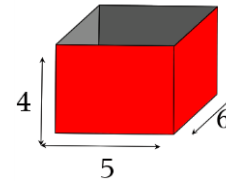
- a) 25 cm      b) 392 cm<sup>2</sup>      c) 480 cm<sup>2</sup>      d) 960 cm<sup>2</sup>      e) None of these

Q.2. A rectangular box 7 cm x 8 cm x 5 cm has total surface area:

- a) 30 cm      b) 131 cm<sup>2</sup>      c) 262 cm<sup>2</sup>      d) 280 cm<sup>2</sup>      e) 280 cm<sup>3</sup>

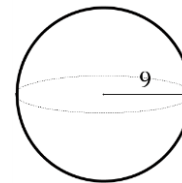
Q.3. A rectangular box (shown below) without a lid measuring 4 cm x 5 cm x 6 cm has a total external surface area:

- a) 15 cm      b) 118 cm<sup>2</sup>      c) 120 cm<sup>2</sup>  
d) 148 cm<sup>2</sup>      e) 240 cm<sup>2</sup>



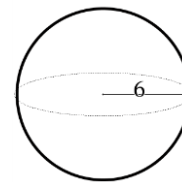
Q.4. A sphere of radius 9 cm has volume:

- a) 81π cm<sup>3</sup>      b) 324π cm<sup>2</sup>      c) 729 cm<sup>3</sup>  
d) 729π cm<sup>3</sup>      e) 972π cm<sup>3</sup>



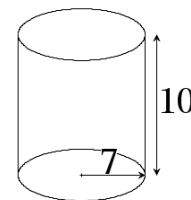
Q.5. A sphere of radius 6 cm has surface area:

- a) 12π cm<sup>2</sup>      b) 36 cm<sup>2</sup>      c) 36π cm<sup>2</sup>  
d) 144π cm<sup>2</sup>      e) 288π cm<sup>2</sup>



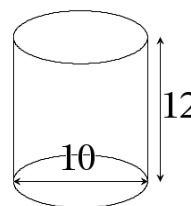
Q.6. A cylinder radius 7 cm and height 10 cm has volume:

- a) 70 cm<sup>3</sup>      b) 70π cm<sup>3</sup>      c) 140π cm<sup>3</sup>  
d) 490 cm<sup>3</sup>      e) 490π cm<sup>3</sup>



Q.7. A cylinder of diameter 10cm and height 12cm has surface area:

- a) 145π cm<sup>2</sup>      b) 170π cm<sup>2</sup>      c) 240π cm<sup>2</sup>  
d) 340 π cm<sup>2</sup>      e) 440π cm<sup>2</sup>

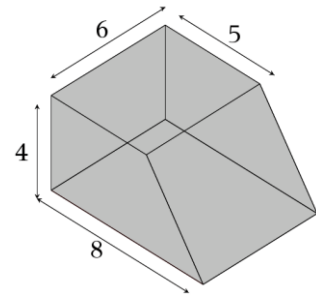


Q.8. Determine the volume of the shape below using the measurements provided.

$$\text{Volume of box: } l \times w \times h = 6 \times 5 \times 4 = 120 \quad \checkmark$$

$$\text{Volume of wedge: } \frac{1}{2} \times l \times w \times h = 6 \times 3 \times 4 = 36 \quad \checkmark$$

$$\text{Total Volume: } 120 + 36 = 156$$



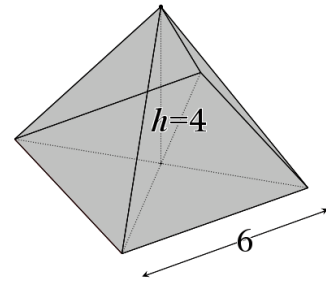
Q.9. Determine the total surface area of the square based pyramid shown below using the measurements provided.

$$\text{Area of base: } l \times w = 6 \times 6 = 36 \quad \checkmark$$

$$\text{Calculate slant height: } c = \sqrt{a^2 + b^2} = \sqrt{3^2 + 4^2}$$

$$\text{Area of triangular faces: } = 4 \times \left( \frac{1}{2} \times 6 \times 5 \right) = 60 \quad \checkmark$$

$$\text{Total Surface Area: } 36 + 60 = 96$$



Q.10. The shape below consists of a square based pyramid on top of a box. Use the measurements provided to determine the total surface area.

$$\text{Total Surface Area of exposed cube: } = 25 + 20 \times 4 \quad \checkmark$$

$$\text{Calculate slant height: } c = \sqrt{a^2 + b^2} = \sqrt{3^2 + 2.5^2}$$

$$\text{Area of triangular faces: } = 4 \times \left( \frac{1}{2} \times \frac{\sqrt{61}}{2} \times 5 \right) = 5\sqrt{61} \quad \checkmark$$

$$\text{Total Surface Area: } = 105 + 5\sqrt{61}$$

