




Foundations of Mathematics and Pre-Calculus 10

Sample Questions for Measurement

Instructions

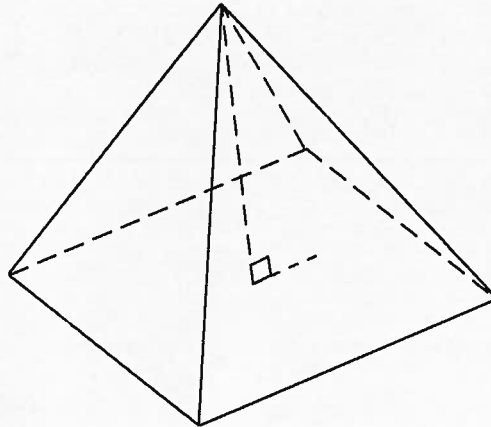
1. You may require a protractor and a ruler (metric and imperial) for paper versions of the questions.
2. You may use math tiles.
3. When using your calculator (scientific or approved graphing calculator):
 - use the programmed value of π rather than the approximation of 3.14.
 - round only in the final step of the solution.
4. Diagrams are not necessarily drawn to scale.
5. For questions marked with , do not use your calculator.

PART A: MULTIPLE-CHOICE QUESTIONS



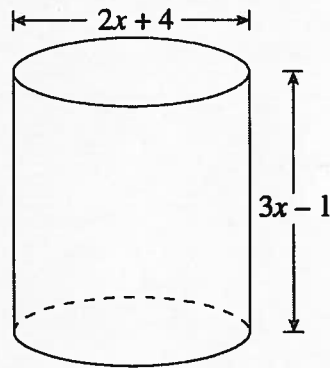
1. Which of the following examples is the best referent for one millimetre?
 - A. diameter of a penny
 - B. thickness of a fingernail
 - C. length of a five-dollar bill
 - D. distance from the floor to a door knob

2. Which expression could be used to calculate the surface area of the right square-based pyramid with a base length of 10 cm and a height of 12 cm?



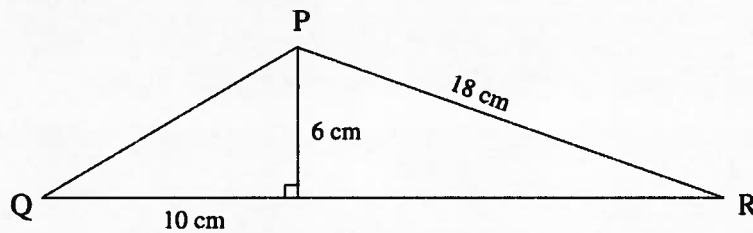
- A. $SA = 2(10)(12) + (10)^2$
- B. $SA = 2(10)(12) + (12)^2$
- C. $SA = 2(10)(13) + (10)^2$
- D. $SA = 2(10)(13) + (13)^2$

3. Which of the following expressions represents the volume of the cylinder below?



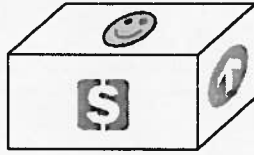
- A. $V = \pi(6x^2 + 10x - 4)$
- B. $V = \pi(3x^3 - x^2 + 12x - 4)$
- C. $V = \pi(3x^3 + 11x^2 + 8x - 4)$
- D. $V = \pi(12x^3 + 32x - 16)$

4. Determine the measure of $\angle QPR$.

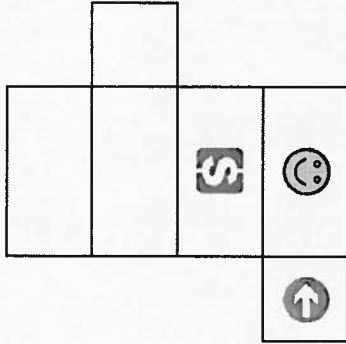


- A. 59°
- B. 71°
- C. 102°
- D. 130°

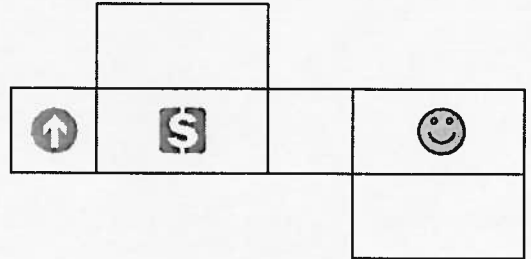
5. Which net diagram represents the prism below?



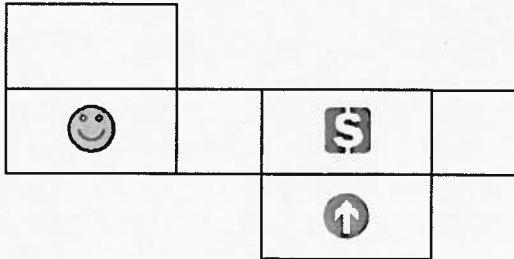
A.



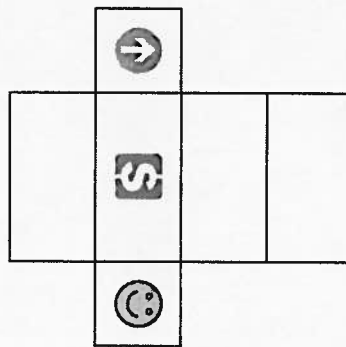
B.



C.

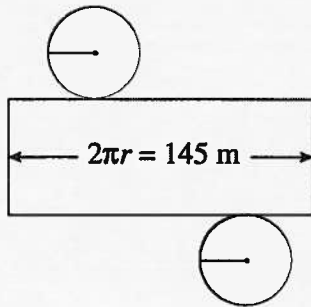


D.

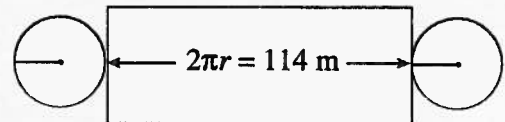


6. Raj was asked to make a cylindrical tank with a lateral surface area of 2622 m^2 and a height of 23 m. Which net diagram below would be correct for this cylinder?

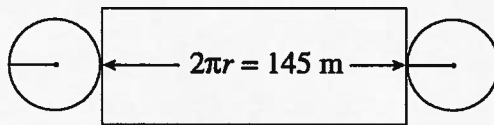
A.



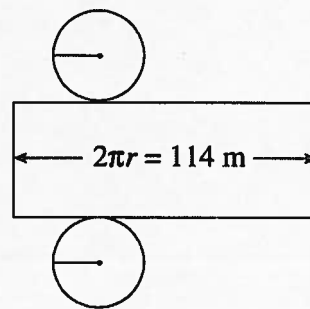
B.



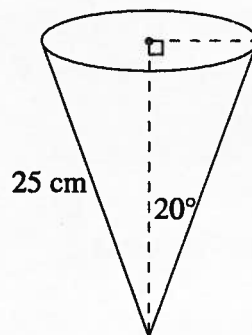
C.



D.

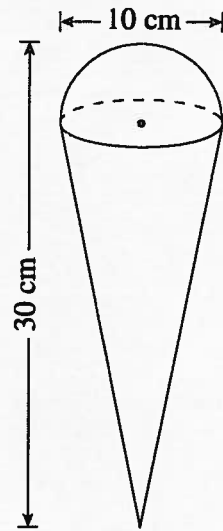


7. Calculate the volume of the right cone below.



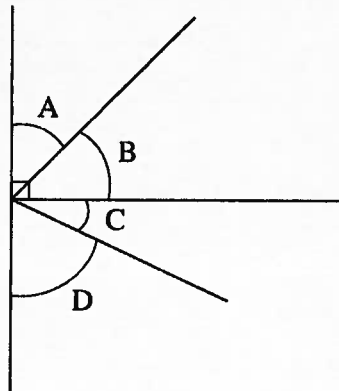
- A. 210 cm^3
- B. 1799 cm^3
- C. 1914 cm^3
- D. 2168 cm^3

8. Determine the surface area of the solid below.



- A. 481 cm^2
- B. 558 cm^2
- C. 1414 cm^2
- D. 2199 cm^2

9. Which of the following angles is an angle of depression?

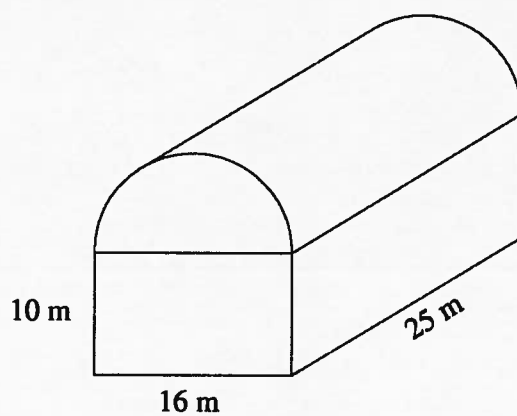


- A. A
- B. B
- C. C
- D. D

10. A cat on the ground is 50 m away from the base of a pole. An osprey's nest is on the top of the pole, which is 20 m tall. What is the measure of the angle of inclination from the cat to the osprey's nest?

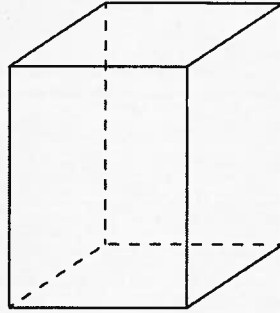
- A. 22°
- B. 24°
- C. 66°
- D. 68°

11. Calculate the volume of the shape below.



- A. $6\,513\text{ m}^3$
- B. $9\,027\text{ m}^3$
- C. $14\,053\text{ m}^3$
- D. $24\,106\text{ m}^3$

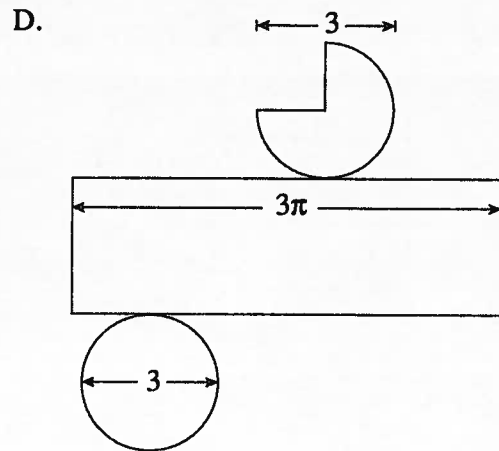
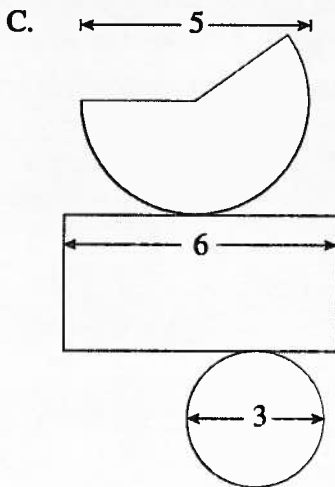
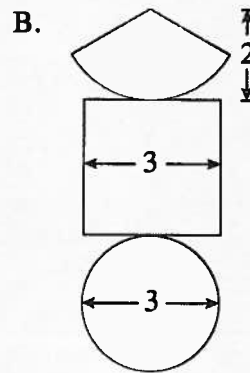
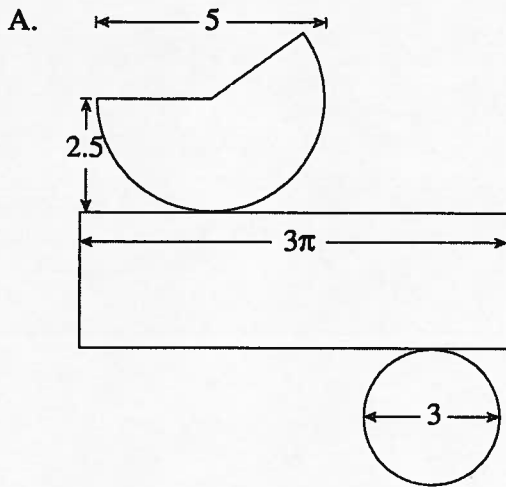
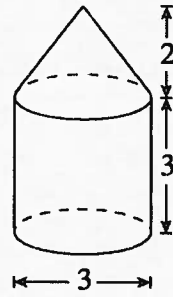
12. A wooden block is a square-based prism, as shown below:



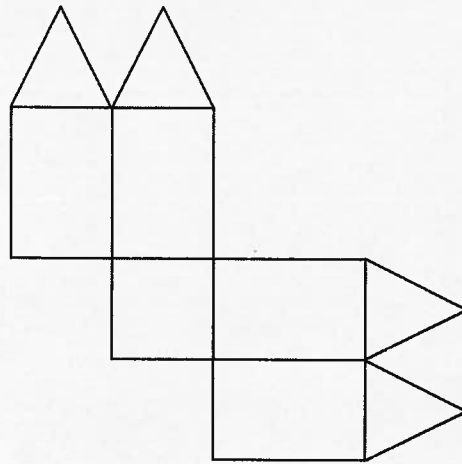
Given the base area is 50 cm^2 and the height is 12 cm , what is its surface area?

- A. 339 cm^2
- B. 439 cm^2
- C. 600 cm^2
- D. 1300 cm^2

13. Which of the following net diagrams represents the figure below? Note: all diagrams drawn to scale.

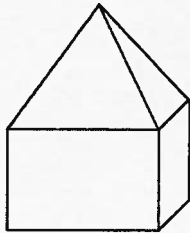


14. Which prism can be formed by the net below? Note: all diagrams drawn to scale.

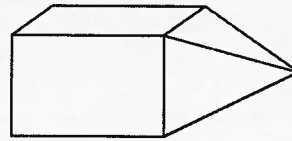


Note: all diagrams drawn to scale.

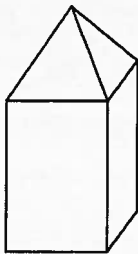
A.



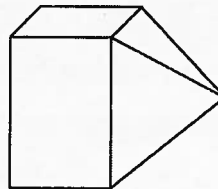
B.



C.



D.



PART B: NUMERIC-RESPONSE QUESTIONS

15. The lateral surface area of a cylinder is 1106 cm^2 . Given that the height is 11 cm, calculate the radius. Answer to the nearest cm.

Record your answer neatly on the Answer Sheet.