5 (i) circumference =
$$2\pi r = 8\pi$$

$$\Rightarrow 2r = 8$$
 (divide both sides by π)

$$\Rightarrow r = 4 \text{ cm}$$

(ii) Surface area of cylinder = curved surface area + area of top + area of bottom

$$= 2\pi rh + 2 \times \pi r^2$$

$$h = 10$$
 and $r = 4$ \Rightarrow surface area $= 2\pi(4)(10) + [\pi(4)^2 \times 2]$

$$= 80\pi + 32\pi$$

$$= 112\pi \text{ cm}^2$$

(iii) Volume of cylinder $= \pi r^2 h$

$$=\pi(4)^2(10)$$

$$= 502.65 \text{ cm}^3$$

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Table of Contents Leaving Cert Maths 2012 Sample Paper

- 1. Understanding the eBook Leaving Cert Maths 2012 Sample Paper
 - The Rise of Digital Reading Leaving Cert Maths 2012 Sample Paper
 - Advantages of eBooks Over Traditional Books
- 2. Identifying Leaving Cert Maths 2012 Sample Paper
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
- 3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Leaving Cert Maths 2012 Sample Paper
 - User-Friendly Interface
- 4. Exploring eBook Recommendations from Leaving Cert Maths 2012 Sample Paper
 - Personalized Recommendations
 - Leaving Cert Maths 2012 Sample Paper User Reviews and Ratings
 - Leaving Cert Maths 2012 Sample Paper and Bestseller Lists
- 5. Accessing Leaving Cert Maths 2012 Sample Paper Free and Paid eBooks
 - Leaving Cert Maths 2012 Sample Paper Public Domain eBooks
 - Leaving Cert Maths 2012 Sample Paper eBook Subscription Services
 - Leaving Cert Maths 2012 Sample Paper Budget-Friendly Options
- 6. Navigating Leaving Cert Maths 2012 Sample Paper eBook Formats

- o ePub, PDF, MOBI, and More
- Leaving Cert Maths 2012 Sample Paper Compatibility with Devices
- Leaving Cert Maths 2012 Sample Paper Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - o Adjustable Fonts and Text Sizes of Leaving Cert Maths 2012 Sample Paper
 - Highlighting and Note-Taking Leaving Cert Maths 2012 Sample Paper
 - Interactive Elements Leaving Cert Maths 2012 Sample Paper
- 8. Staying Engaged with Leaving Cert Maths 2012 Sample Paper
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Leaving Cert Maths 2012 Sample Paper
- 9. Balancing eBooks and Physical Books Leaving Cert Maths 2012 Sample Paper
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Leaving Cert Maths 2012 Sample Paper
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Leaving Cert Maths 2012 Sample Paper
 - Setting Reading Goals Leaving Cert Maths 2012 Sample Paper
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Leaving Cert Maths 2012 Sample Paper
 - Fact-Checking eBook Content of Leaving Cert Maths 2012 Sample Paper
 - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
- 14. Embracing eBook Trends
 - Integration of Multimedia Elements
 - Interactive and Gamified eBooks

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