IM2 Book 2 Selected Answers

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136. $\frac{12{,}400\pi}{3} + 800\sqrt{3}\ ft^2$

137. (a) $46°$
     (b) $46°$

138. –

139. –

140. $\frac{\pi}{4}$

141. (a) $1:8$
     (b) $7:8$

142. 12.5

143. (a) $2k$
     (b) $2k$
     (c) –

144. $\angle BCA = 20°$, $\angle CAB = 110°$, $\widehat{AC} = 100°$, major arc $\widehat{BC} = 220°$

145. –

146. –

147. –

148. –

149. –

150. (a) $\frac{1}{2}$
     (b) $\frac{1}{8}$
     (c) $100\pi\ cm^3$
     (d) $\frac{25\pi}{2}\ cm^3$

151. $\angle R = 67°$, $\angle P = 126°$

152. –

153. –

154. –

155. $1 : \sqrt[3]{2}$

156. $V = \frac{485\pi}{3},\ LA = 55\sqrt{2}$

157. 104°, 76°

158. $\frac{9}{4}$

159. $\frac{13.6}{\sin 63°}$

160. –

161. –

162. $864\pi\ cm^2$

163. $2\sqrt{2}\ in.$

164. 90°

165. –

166. (a) $8 : 27$
    (b) $2 : 3$
    (c) –

167. $2\pi - 3\sqrt{3}$

168. $16\ cm$

169. (a) 70°
    (b) $180 - k°$

170. (a) $\frac{12.1}{\sin 48°}$
    (b) $\frac{a}{\sin A}$

171. $\frac{5\sqrt{3}}{3}$

172. –

173. $144\pi\ cm^2$

174. $\frac{250\pi}{3}$

175. 21, 1

176. 30

177. –

178. Minor arc length = 11.07; major arc length = 20.34; $A_1 = 17.68$; $A_2 = 60.86$

179. $\frac{2\pi r^3}{3}$

180. (a) $39\pi\ cm^2$
     (b) $39\pi\ cm^2$

181. –

182. $V_1 = \frac{1{,}280\pi}{3} - 320\sqrt{3},\ V_2 = \frac{2{,}560\pi}{3} + 320\sqrt{3}$

183. $15, \sqrt{505}$

184. $L = 16, A_1 = 48, A_2 = 120$

185. –

186. tangent line: $y - 12 = \frac{1}{8}(x - 6)$

187. $2\pi - 4$

188. (a) $16h\pi - h^2\pi\ cm^2$
     (b) $16h\pi - h^2\pi\ cm^2$
     (c) –
     (d) –
     (e) $\frac{1{,}024\pi}{3}\ cm^3$
     (f) $\frac{2{,}048\pi}{3}\ cm^3$

189. $\sqrt{r^2 - d^2}$

190. –

191. $\frac{29}{4}$

192. 66.33

193. (a) 120
     (b) $25r$
     (c) $\frac{24}{5}$

194. (a) –
     (b) –
     (c) 1

195. $4, 9, 13, 12$

196. (a) $2\pi rh - \pi h^2\ cm^2$

(b) $2\pi rh - \pi h^2\ cm^2$

(c) –

(d) –

(e) $\frac{2\pi r^3}{3}\ cm^3$

(f) $\frac{4\pi r^3}{3}\ cm^3$

197. $8\ in.$

198. $2.21\ cm$

199. –

200. (a) –

(b) $R - r$

(c) –

201. $1.5 - \frac{\sqrt[3]{19}}{2}\ cm$

202. (a) $\frac{1}{3}$

(b) $\frac{2}{3}$

203. $8\sqrt{3}$

204. $12\pi + 36\ in.$