

IM2 Book 2 Selected Answers

John Spence

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

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

145. –

146. –

147. –

148. –

149. –

150. (a) $\frac{1}{2}$

(b) $\frac{1}{8}$

(c) $100\pi \text{ cm}^3$

(d) $\frac{25\pi}{2} \text{ cm}^3$

151. $\angle R = 67^\circ$, $\angle P = 126^\circ$

152. –
153. –
154. –
155. $1 : \sqrt[3]{2}$
156. $V = \frac{485\pi}{3}, LA = 55\sqrt{2}$
157. $104^\circ, 76^\circ$
158. $\frac{9}{4}$
159. $\frac{13.6}{\sin 63^\circ}$
160. –
161. –
162. $864\pi \text{ cm}^2$
163. $2\sqrt{2} \text{ in.}$
164. 90°
165. –
166. (a) $8:27$
(b) $2:3$
(c) –
167. $2\pi - 3\sqrt{3}$
168. 16 cm
169. (a) 70°
(b) $180 - k^\circ$
170. (a) $\frac{12.1}{\sin 48^\circ}$
(b) $\frac{a}{\sin A}$
171. $\frac{5\sqrt{3}}{3}$
172. –
173. $144\pi \text{ cm}^2$
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) $39\pi \text{ cm}^2$

(b) $39\pi \text{ cm}^2$

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) $16h\pi - h^2\pi \text{ cm}^2$

(b) $16h\pi - h^2\pi \text{ cm}^2$

(c) –

(d) –

(e) $\frac{1,024\pi}{3} \text{ cm}^3$

(f) $\frac{2,048\pi}{3} \text{ cm}^3$

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) $2\pi rh - \pi h^2 \text{ cm}^2$

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

(c) $-$

(d) $-$

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

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

197. 8 in.

198. 2.21 cm

199. $-$

200. (a) $-$

(b) $R - r$

(c) $-$

201. $3 - \sqrt[3]{26} \text{ cm}$

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

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

203. $8\sqrt{3}$

204. $12\pi + 36 \text{ in.}$