Students are expected to complete homework assignments on their own before referring to the following pages. The answers and hints are designed to check work and clarify problems. The original intent of the layout was for display in class after assignments had been completed. Students should use the following information as help to understand the exercises and master the concepts.

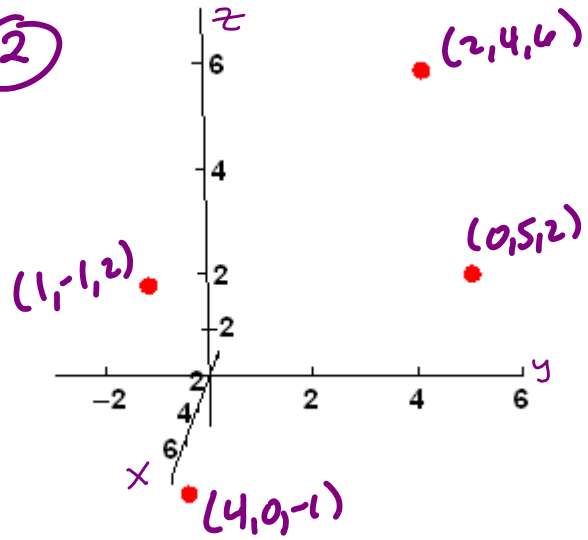
Calculus D

Chapter 12

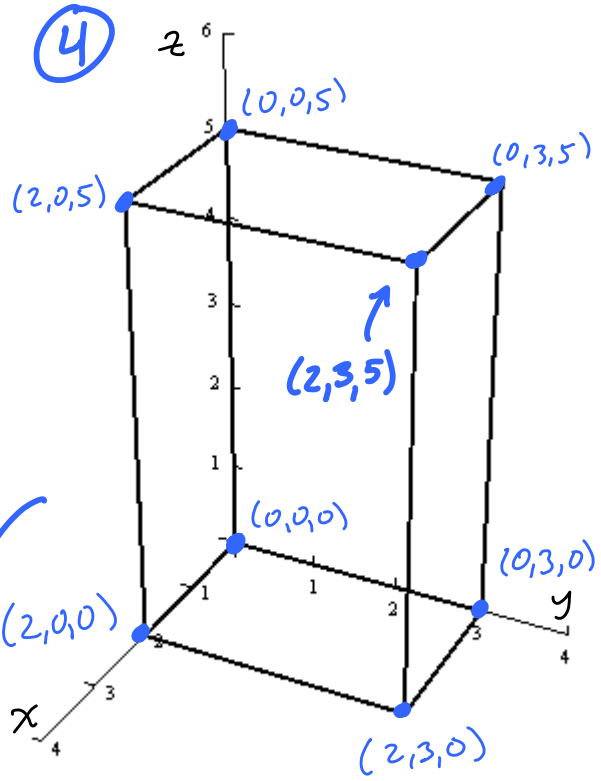
Even Answers & Hints for Homework

12.1 Even Answers

(2)



(4)



(4) Continued

xy-plane projection (2,3,0)

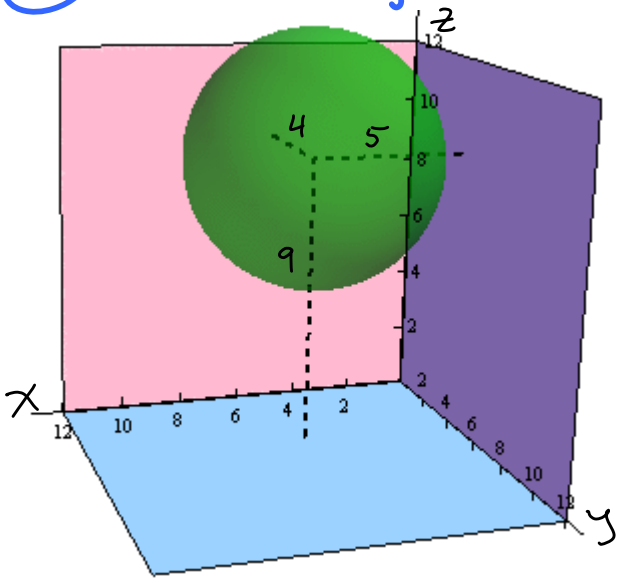
yz-plane projection (0,3,5)

xz-plane projection (2,0,5)

Diagonal length = $\sqrt{38}$

(20) Sphere : $(x-3)^2 + (y-2)^2 + (z-7)^2 = 11$

(22) $(x-5)^2 + (y-4)^2 + (z-9)^2 = 16$



12.3 Even Answers

(14) $\vec{A} \cdot \vec{P} = \langle a, b, c \rangle \cdot \langle 2, 1.5, 1 \rangle$

$= 2a + 1.5b + c$

$=$ Total Revenue for the Day

(26) $\langle -6, b, 2 \rangle \cdot \langle b, b^2, b \rangle = 0$

$b^3 - 4b = 0$

$b(b^2 - 4) = 0$

$b = 0, \; b = 2, \; b = -2$

12.5 Even Answers

(12) Parametric

$x = t$

$y = 1$

$z = -t$

Symmetric

$x = -z, y = 1$

(22) The lines intersect at $(3, 5, 1)$.

12.6 Even Answers

(21) VII (22) IV (23) II (24) III

(25) VI (26) I (27) VIII (28) V

(42) Sketch the region bounded by $z = x^2 + y^2$ and $z = 2 - x^2 - y^2$

12.7 Even Answers

Describe each surface.

(32) $\rho = 3$

(34) $\phi = \frac{\pi}{2}$

(36) $\theta = \frac{\pi}{3}$