

Phys 208 – Homework (HW14) – SP13 (Due Monday, March 4, 2013)

Read the following: Ch 6 -- Sections 1, 2, 3 Basic Vector Properties
Ch 6 -- Sect. 4 Differentiation of Vectors
Ch 10 – Sect. 8 Curvilinear Coordinates
Ch 10 – Sect. 9 Vector Operators in Orthogonal in
Curvilinear Coordinates

Problems: 6.4.4, 6.4.6, 6.4.8, 6.4.9, 6.4.10, 6.6.17, 6.6.18

Answers: 6.6.18 $\hat{e}_x = \hat{x} = \hat{i}$ 6.6.20 $2r\hat{e}_r$

Phys 208 – Homework (HW15) – SP13 (Due Wednesday, March 6, 2013)

Read the following: Ch 10 -- Sect. 5 Kronecker Delta and Levi-Civita Symbol
Ch 10 – Sect. 8 Curvilinear Coordinates
Ch 10 – Sect. 9 Vector Operators in Curvilinear Coordinates

Problems: 10.5.6, 10.5.7, 10.5.8, 10.5.10(a), 10.8.1

Answers: 10.5.6 (a) 3 (b) 0 (c) 2 (d) -2 (e) -1 (f) -1

10.5.7 (a) $\delta_{kq}\delta_{ip} - \delta_{kp}\delta_{iq}$ (b) $\delta_{ap}\delta_{bp} - \delta_{aq}\delta_{bp}$

Phys 208 – Homework (HW 16) – SP13 Due Friday, March 8, 2013

Read the following: Ch 10 – Sect. 8 Curvilinear Coordinates
Ch 10 -- Sect. 9 Vector Operators in Orthogonal Curvilinear Coordinates

Problems: 10.8.3(Only work out the velocity.), 10.8.6, 10.8.11(Again, only work out the velocity.), 10.9.16, 10.9.17, 10.9.19

Answers: 10.9.17 $\frac{2}{r}$, $\frac{\cot \theta}{r}$, $\frac{\hat{e}_\phi}{r}$, $\frac{\hat{e}_r \cot \theta - \hat{e}_\theta}{r}$