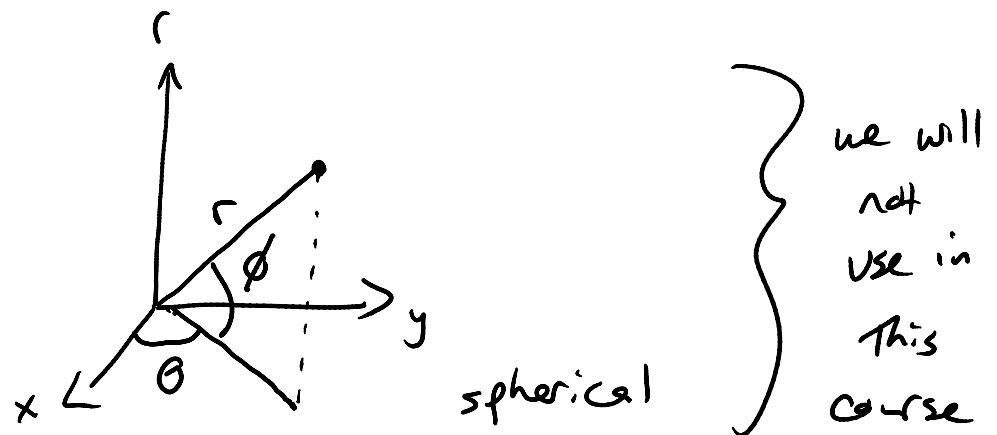
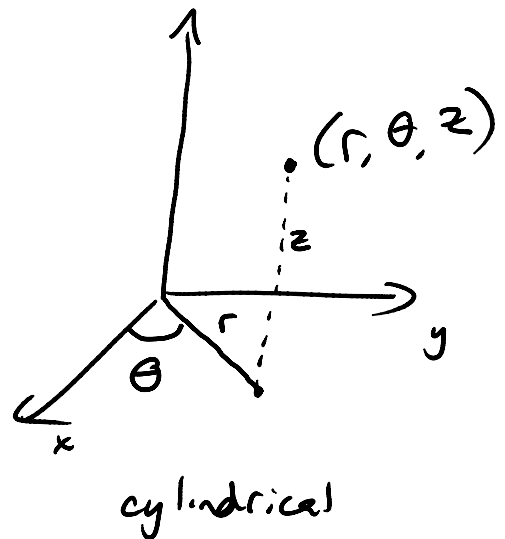
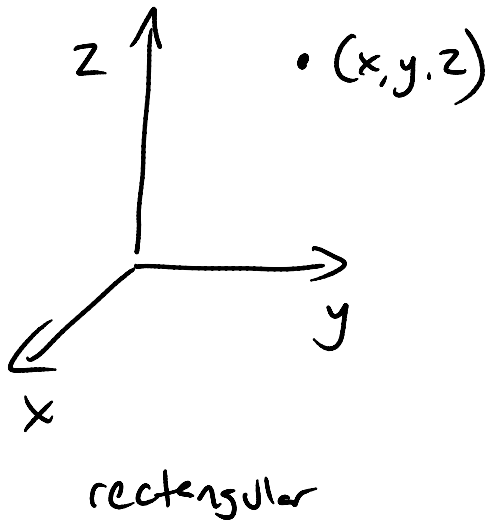


Section 27.2: cont'd

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3D coordinates:

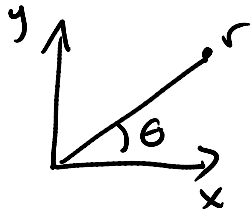


example: rewrite the following equation using cylindrical coordinates

$$z = x^2 + y^2$$

recall: cylindrical is (r, θ, z) , so leave z unchanged and

substitute in x and y



$$x = r \cos \theta$$

$$y = r \sin \theta$$

so

$$\begin{aligned} z &= x^2 + y^2 \\ &= r^2 \cos^2 \theta + r^2 \sin^2 \theta \\ &= r^2 (\cos^2 \theta + \sin^2 \theta) \\ &= r^2 \end{aligned}$$

note: no recommended problems from this section