ME192 Homework #7

10/22/14

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Score \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.3) Jacobian derived from the velocity propagation from Base to Tip

(7 points) – 1 point for frame 1. 2 points each for frames 2,3,4





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Therefore, 

5.15) (6 points)

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Taking partial differentiation w.r.t. 



5.18) (3 points)

Taking partial differentiation of the 4th column 0P4Org w.r.t. 



5.19) (4 points)





Taking the determinant of *0J* and setting the result equal to 0.

*det(0J)=-d2*

Singularity occurs when d2=0.