

Problem set: Lecture 11:

6. From triangle-inequality,

$$\left\| \frac{v}{2} + \frac{w}{2} \right\| \leq \left\| \frac{v}{2} \right\| + \left\| \frac{w}{2} \right\| = \frac{1}{2} \|v\| + \frac{1}{2} \|w\| \leq \frac{1}{2} (1) + \frac{1}{2} (1) = 1$$

$$\left[ \begin{array}{l} \|v\| \leq 1 \text{ given} \\ \|w\| \leq 1 \end{array} \right]$$

10.

Already solved in Lecture 9: 8.