

MATH 140A. HOMEWORK 5. DUE WEDNESDAY, FEBRUARY 11

Chapter 2, problems 17, 18, 19, 20, 21, 24, 26.

**H1.** Suppose  $X$ , and  $F \subset H \subset X$ .

(a) Write down the definition of what it means for  $F$  to be closed in  $H$  (or equivalently,  $F$  is closed relative to  $H$ ).

(b) Suppose that  $H$  is closed in  $X$ . Show that  $F$  is closed in  $H$  if and only if  $F$  is closed in  $X$ .