

## Math 430 Fall 2016 Homework #12

Due Dec. 6, Tue in class

1. Textbook, Section 6.1, page 472: 1(c), 6, 11, 12;
2. Textbook, Section 6.2, page 483: 5(a);
3. Let  $P$  be an orthogonal matrix. Show that  $|\det P| = 1$ .
4. Let  $A$  be an  $n \times n$  real matrix. Show that (i)  $\det(A^T A) \geq 0$ , and (ii)  $\det(A^T A) > 0$  if and only if  $A$  is invertible.