

**WORKSHEET 2/27/23**  
**MATH 2331, SPRING 2023**

- (1) Let  $L$  be the line parallel to  $\vec{v}_1 = (3, 4, 0)$ . Find an orthonormal basis for  $L$ .
- (2) Let  $V$  the plane spanned by  $\vec{v}_1 = (3, 4, 0)$  and  $\vec{v}_2 = (1, 0, 0)$ . Extend the basis you found in #1 to an orthonormal basis for  $V$ .
- (3) Find the QR factorization of the matrix

$$M = \begin{bmatrix} 2 & 2 \\ 1 & 7 \\ -2 & -8 \end{bmatrix}.$$