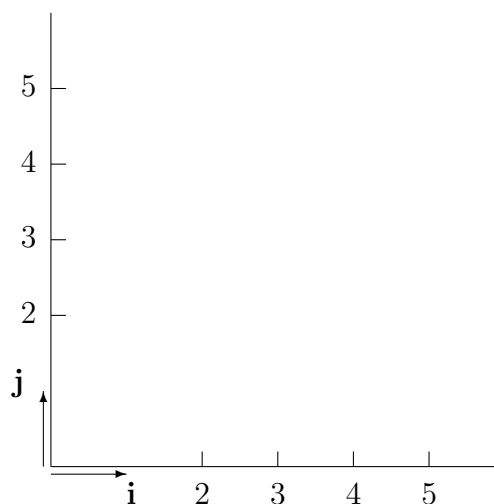


MA1S11 (Timoney) Tutorial/Exercise sheet 1
[due Monday October 1, 2012]

1.

- (a) Show (on the graph) the point P with coordinates $(2, 4)$ and the point Q with coordinates $(1, 2)$ [and label the points!]
- (b) Sketch the position vectors of the two points (\mathbf{P} for P and \mathbf{Q} for Q) [and label them!]
- (c) Draw the vector $\mathbf{Q} - \mathbf{P}$
- (d) Calculate the distance from P to Q .
- (e) Calculate $\|\mathbf{Q} - \mathbf{P}\|$.



2. For $\mathbf{v} = -3\mathbf{i} + 7\mathbf{j}$ and $\mathbf{w} = 6\mathbf{i} - 3\mathbf{j}$, calculate

- (a) $\|\mathbf{v} + \mathbf{w}\|$
- (b) The coordinates of the points in the plane with position vectors \mathbf{v} and \mathbf{w} . (Write down which is which!)
- (c) $\mathbf{v} \cdot \mathbf{w}$
- (d) $\cos \theta$ where θ is the angle between \mathbf{v} and \mathbf{w} .

*Please hand in your work at the lecture (in MacNeill at 12). Put your **name & id number** on what you hand in.*

Richard M. Timoney