

## MATE 4145 assignment 2

1. (a-c) §3.1: not to hand in: ex 3–6. Hand in exercises 11, 12, 13. Use the property discussed in the posted lesson 3-1: if  $e_j$  is the  $j$ th basis vector, then  $Ae_j = \dots$
2. Computer exercise 18.
3. (a,b) Hand exercises: choose one of 1–3, and exercise 12 of §3.2.
4. (a,b) 13, 14 of §3.2.
5. (a-c) §3.2. Computer exercise: exercise 6, and two others of 4–9, replicating the steps shown in lesson 3-2 (posted video). Draw a circle not centered at the origin in blue, and the curves resulting from the 3 transformations you choose in a different colour each, all on the same plot. Present the diary file.  
  
Not to hand in, but as practice for lab quiz: select some of exercises 21–45 of §3.2. As above, use circle instead of dog.
- 6-7. Choose two of 6–9 of §3.3, one illustrating each case. If the transformation is linear, you must provide proof; if it is not, you must provide a concrete example, as discussed in lesson 3-3.
8. (a-c) 5, 11, 13 of §3.3.
- 9–11. §3.4: exercises 1, 2, 3.