

## MATH 625 Sheet 4

1. Page 54/4.1bcd
2. Page 55/4.3
3. Page 55/4.5
4. Page 56/4.6a
5. Page 59/4.11ac Make sure you prove  $f \in \mathcal{V}$ .  
HINT on part c:  $(a + b)^2 \leq 2a^2 + 2b^2$ ; Cauchy-Schwarz will help too.
6. Page 60/4.15
7. For two dimensional Brownian motion  $B = (B_1, B_2)$  , compute:
  - a)  $d(\sqrt{B_1^2 + B_2^2 + 1})$
  - b)  $d(B_1 e^{B_2})$

8. Page 60/4.14de

Add this one:

$$\int_0^T B_t^3 dt$$

You can use the answer to 4.14b from the back.