

## Answers to repetition exercises

1. (a)  $e^{-1} \approx 0.368$   
(b)  $\frac{2}{3}e^{-1} \approx 0.245$   
(c)  $\frac{5}{3}e^{-1}$   
(d)  $2/3 \approx 0.667$   
(e)  $5/3 \approx 1.667$   
(let  $g(y) = 2^y$  in the rule for calculating  $E(g(Y))$ .)  
(f)  $2/9 \approx 0.222$  (observe that  $Y^2 = Y$  and hence  $E(Y^2) = E(Y)$ )  
(g)  $8/9 \approx 0.889$   
(h)  $2/9 \approx 0.222$   
(i) 1
2. (a)  $1/\pi \approx 0.318$   
(b)  $2/\pi \approx 0.637$   
(c)  $3/4 = 0.75$   
(d)  $\pi/2 \approx 1.571$   
(e)  $\pi^2/3 \approx 3.290$   
(f)  $\pi^3/4 \approx 7.752$
3. 
$$\frac{\mu_{\alpha\beta} - \mu_{\alpha}\mu_{\beta}}{\sqrt{(q_{\alpha} - \mu_{\alpha}^2)(q_{\beta} - \mu_{\beta}^2)}}$$