Initial assessment solutions

These are the solutions to the initial assessment. If you didn't answer the questions correctly, there are chapter references to the topics in the Pure Maths and Statistics for Actuarial Studies course that you could study in order to improve your skills.

		Chapter reference
1.	$8\ln(1+i)$ or $\ln(1+i)^8$	Algebra
2.	$\dfrac{4(1+x)^{-5}}{\ln(1+x)}-\dfrac{1-(1+x)^{-4}}{(1+x)[\ln(1+x)]^2}$	Differentiation
3.	$-0.25<x<1.25$	Mathematical constants and standard functions
4.	$x=1.707$ or $x=0.293$	Algebra
5.	$\dfrac{a(1-r^n)}{1-r}$	Algebra
6.	$e^y(x+2y)\left\{(4+x+2y)\ln xy+\dfrac{x+2y}{y}\right\}$	Differentiation
7.	0.06162	Numerical methods 1
8.	$-2<x<3$	Algebra
9.	$\dfrac{1}{8}\ln 3+\dfrac{3}{2}=1.637$	Integration
10.	$1+x+\dfrac{x^2}{2!}+\dfrac{x^3}{3!}+\cdots$	Differentiation
11.	1.11	Numerical methods 2
12.	5,928	Integration
13.	$\lambda=\dfrac{\sum_{i=1}^{n}x_i}{n}$	Differentiation
14.	$\lambda^n\exp\left[-\lambda\sum_{i=1}^{n}x_i\right]$	Algebra

15.	44.333	Measures of location
16.	0.4	Probability
17.	£6,363.29	Measures of spread and skewness
18.	0.70978	Advanced probability
19.	0.75	Continuous random variables
20.	0.7639	Continuous random variables
21.	0.6667	Continuous random variables
22.	10.26	Discrete random variables
23.	0.62378	Discrete random variables
24.	$\mathbf{a}.\mathbf{b} = 0$	Vectors and matrices
25.	$\begin{pmatrix} \frac{3}{11} & -\frac{1}{11} \\ -\frac{4}{33} & \frac{5}{33} \end{pmatrix}$ The eigenvalues are 3 and 11	Vectors and matrices

ActEd, First Floor, Kimber House, 1 Kimber Road, Abingdon, Oxfordshire. OX14 1BZ
Tel: 01235 550005
ActEd@bpp.com www.ActEd.co.uk