Christ Church Foundation School

Lower 6 Test

Attempt ALL Questions. Read the instructions carefully

1. Without using a calculator simply the following
	1. $\sqrt{28}$ + $\sqrt{343 }$ **[5 marks]**
	2. ($\sqrt{75}$ + $\sqrt{12 }$)2 – ($\sqrt{75}$ - $\sqrt{12 }$)2 **[3 marks]**
2. Prove that
	1. $\frac{\sqrt{6} + \sqrt{2 }}{\sqrt{6} - \sqrt{2 }}$ = 2 + $\sqrt{3}$ **[5 marks]**
	2. $\frac{\sqrt{6} + \sqrt{2 }}{\sqrt{6} - \sqrt{2 }}+ \frac{\sqrt{6}- \sqrt{2 }}{\sqrt{6} + \sqrt{2 }}$ = 4 **[5 marks]**
3. By using the substitution y = 2x calculate the value of x in the following equation

4x – 3(2x +1) + 8=0 **[7 marks]**

1. Solve for x and y in the simultaneous equations

log (x-1) + 2 log y =2 log 3

log x + log y = log 6 **[8 marks]**

1. In 2010, Partap deposited $7000 in a fixed deposit account which promises interest of 6% compounded yearly. The amount $*x* at the end of *n* years is

*x* = 7000(1.06)*n*

* 1. Find the amount of money Partap will have at the end of 2017. **[2 marks]**
	2. Find the year in which the amount of money first reaches $18 000. **[4 marks]**