

**tec 6.** A student measures the temperature ( $T$ ) of water in an insulated flask at times ( $t$ ) separated by 1 minute and obtains the following values:

$t(s)$	0	1	2	3	4	5	6	7	8
$T(^{\circ}C)$	98.51	98.50	98.50	98.49	98.52	98.49	98.52	98.45	98.47

(a) Calculate the mean temperature and its standard error.

(b) To test whether or not the water is cooling, plot a graph of the temperature versus time and make a least-squares fit of a straight line to the data. Is there a statistically significant slope to the graph. Be sure to explain this answer.