

**Exercise 1 help file:** This file contains an annotated portion of the results output by codeml for a maximum likelihood analysis of a pair of sequences. The box contains the portion of the results file that is most relevant to completing exercise 1. These lines of the output can be found at the end of the results file.

```
.  
.br/.
```

```
pairwise comparison, codon frequencies: Fcodon.
```

```
2 (Sim) ... 1 (Mel)
```

```
lnL = -786.354023
```

```
0.17748 2.24589
```

```
t= 0.1775 S= 44.6 N= 555.4 dN/dS= 0.0010 dN= 0.0008 dS= 0.7866
```

This line indicates a pairwise comparison. "Sim" and "Mel" are the sequence labels provided in the sequence file. 1 and 2 indicate the order of these sequences in that file.

This line gives the log likelihood (ln L) of the pair of sequences

This is the value of  $\omega$ . In this case it was fixed = 0.001