

Solutions

2.1 A Independent observations strengthen a model when they make a consistent prediction. Similarity is evidence to evaluate alongside ancestry, sequence comparisons and alternative explanations, rather than proof from one feature.

2.2 $\text{identity} = 21/28 \times 100 = 75\%$.

2.3 False. The endosymbiotic model does not say that every organelle arose from an engulfed bacterium. A laboratory model of early chemistry is not a recreation of the whole historical event.

2.4 endosymbiosis. endosymbiosis means One organism living within another in an evolutionary association.

3.1 Both 75%. Short alignments and identity alone do not establish ancestry or dates; homologous loci, models and wider evidence are required.