

4 This question is about the evolution of a star.

(a) A main sequence star is created in a collapsing region of a nebula.

The table gives different energy stores for the gases in the collapsing nebula, from when the nebula starts to collapse to just before the main sequence star is created.

Complete the table by placing ticks (✓) to show whether each energy store increases, decreases or stays the same.

(4)

Energy store	Increases	Decreases	Stays the same
chemical			
gravitational potential			
nuclear			
thermal			

(b) At the end of the main sequence stage of a star’s evolution, the star can become a red giant or a red supergiant.

Give the property of a star that determines whether it becomes a red giant or a red supergiant.

(1)

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(c) A red giant star eventually becomes a white dwarf star.

Discuss the differences between a red giant star and a white dwarf star.

(4)

(Total for Question 4 = 9 marks)

