▶ **Problem 11.3-01 (d)**
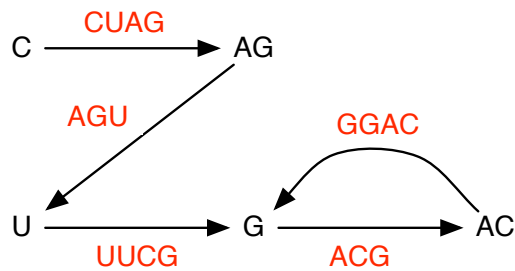
Answer the following questions for the pair of fragment lists given.

(i) From how many RNA chains could the given list of G-fragments arise? From how many chains could the given list of U,C-fragments arise? Which of the these numbers provides a better estimate of the the number of RNA chains whose G-fragments and U,C-fragments are as described?

(ii) Find all RNA chains with the given complete enzyme digests.

G-fragment: UUCG, G, ACG, CUAG

U,C-fragment: G, C, GGAC, U, AGU, C, U

Solution. The G-fragments arise from any of $4! = 24$ possible chains. Observing that the chain ends at G, the U,C-fragments could have come from one of $6!/(2!2!) = 180$ chains. The better estimate is 24 chains. There is one Eulerian trail ending at G, and it begins at C (see the following figure). The only possible chain is CUAGUUCGGACG.

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