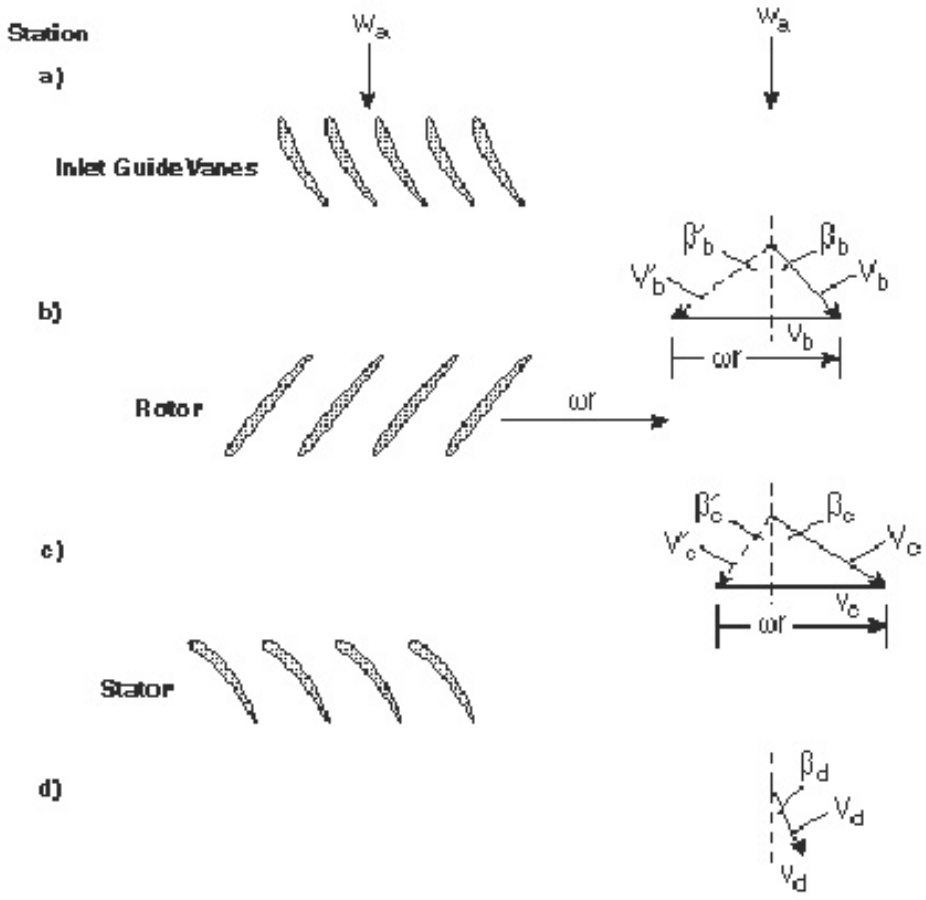
Chapter 9, Question 4:
Energy Exchange with Moving Blades

Assuming the flow remains well-behaved (no separations), when the axial velocity is reduced by a factor of two

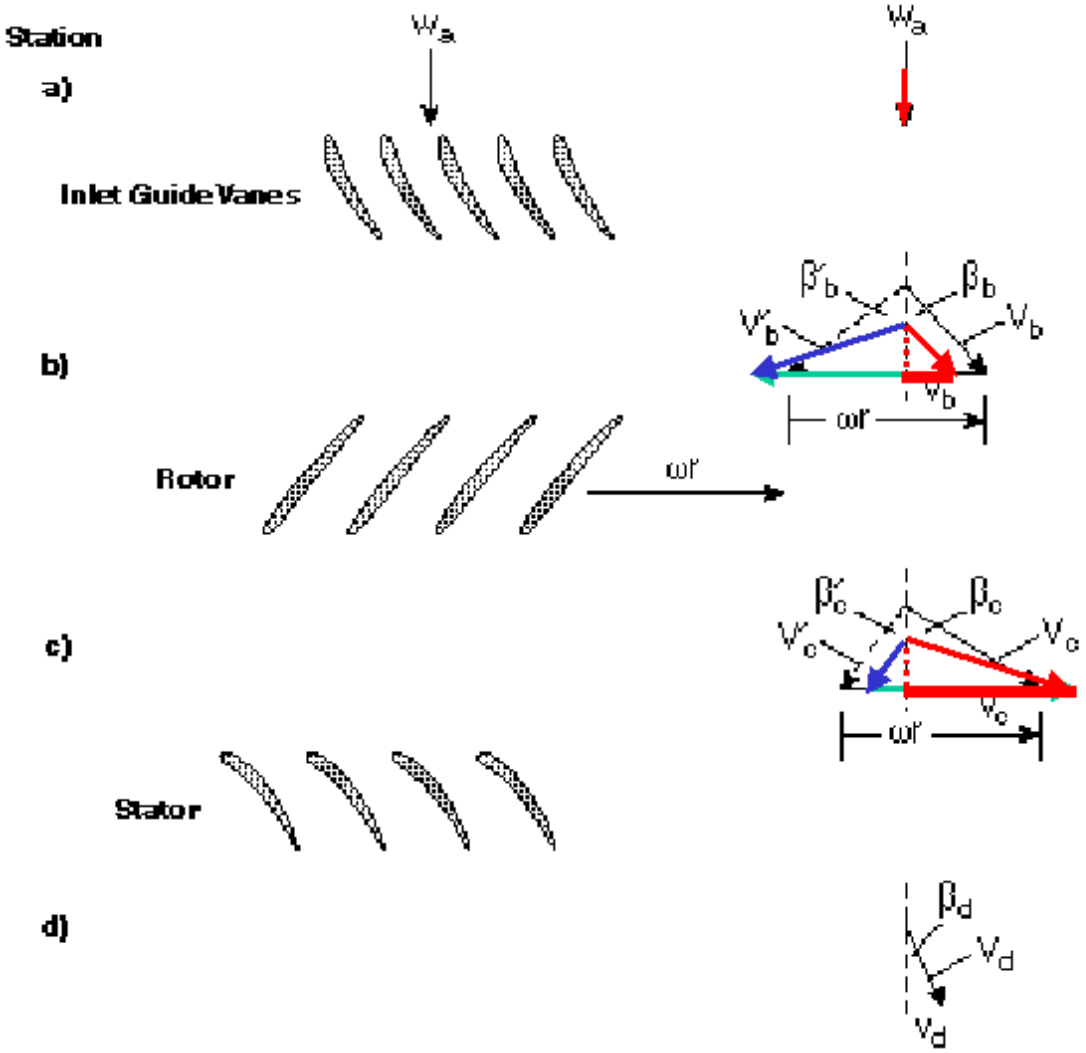


1) More power is added to flow
2) Less power is added to flow
3) The total temperature rise increases
4) The total temperature rise decreases
5) I don't know

L.O. I & J

Chapter 9, Question 4 Answer:

The correct answer is 3) The total temperature rise increases



Therefore the total temperature increase across the blade row is larger for the case where the axial velocity is reduced by a factor of two.

Without actually calculating the difference, however, it is difficult to determine whether the power added to the flow increased (since the mass flow was reduced by a factor of two). All we can say for sure is that the power per unit mass flow increased.

Page 12 of 12

Class performance (2001) -- Note results are not accurate. Responses were roughly evenly distributed but I had mistakenly left the system running after I announced the correct answer so for fun everyone plugged in the right answer:

Question 2 : Question 2