## Homework 8 Answers

Please be sure to clearly show your work in the solutions that you submit. Your approach is much more important than obtaining the correct numerical answer.

Problem 4.9: Resistor value is between 10 Kohm and 20 Kohm.

Problem 4.11: Source voltage range is -150 mV to 150 mV .
Problem 4.12: Lower limit of $\mathrm{v}_{\mathrm{s}}$ is -49 mV (upper limit is not given in this solution).
Problem 4.13: The full answer is not given here, but if you set all of the resistors equal to the same value, the gain is $\mathrm{G}=1$.

Problem 4.20: Lower limit of $\mathrm{v}_{\mathrm{s}}$ is -3 V (upper limit is not given in this solution).
Problem 4.21: The lower and upper limits of $\mathrm{v}_{\mathrm{s}}$ are equal in this case (exact value is not given here).

Problem 4.25: Lower limit of $\mathrm{v}_{\mathrm{s}}$ is -1.8 V (upper limit is not given in this solution).
Problem 4.26: Lower limit of $\mathrm{v}_{\mathrm{s}}$ is -6.5 V (upper limit is not given in this solution).
Problem 4.27: Lower limit of $\mathrm{v}_{\mathrm{s}}$ is 5.5 V (upper limit is not given in this solution).

