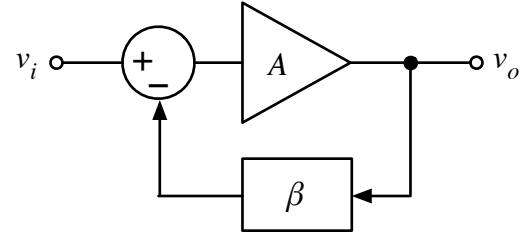


In a classic feedback amplifier system as shown at right, an open-loop gain with a poor tolerance is being constrained using a feedback loop with a much better tolerance.



- a. If the open-loop gain has a nominal value of 100 with a variance of  $\pm 50\%$  and the feedback is perfect with a value of 0.0667, calculate the nominal, high, and low values of the closed-loop gain.

$G_{low} =$  \_\_\_\_\_;  $G_{nom} =$  \_\_\_\_\_;  $G_{high} =$  \_\_\_\_\_

- b. Now, what if the feedback circuit itself is not perfect, but instead has a nominal value of 0.0667 with  $\pm 5\%$  variance? Calculate the possible high and low values of the closed-loop gain.

$G_{low} =$  \_\_\_\_\_;  $G_{high} =$  \_\_\_\_\_