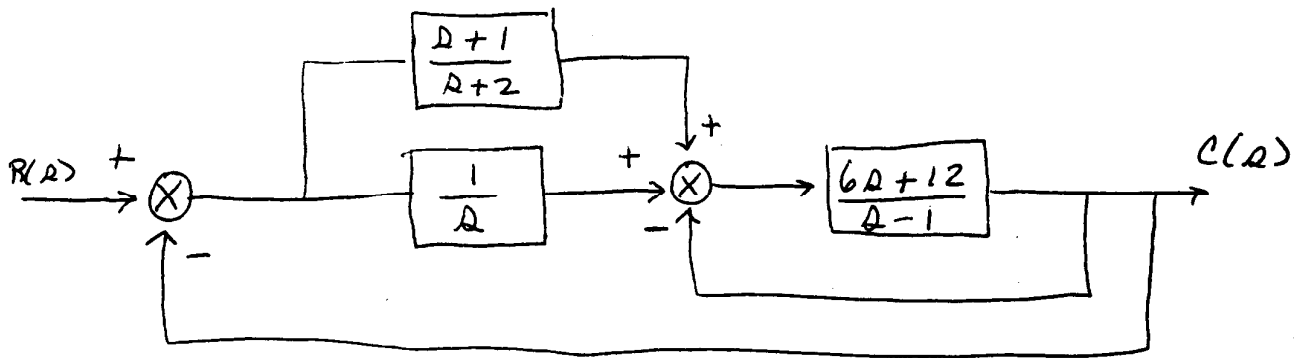ECE 365 Q6 02/22/00

NAME: KEY

Honor Code:

Find the equivalent Closed Loop Transfer Function.

Parallel blocks:

$$\frac{\Delta+1}{\Delta+2} + \frac{1}{\Delta} = \frac{\Delta^2 + 2\Delta + 2}{\Delta(\Delta+2)}$$

Feedback blocks

$$\frac{G}{1+GH} = \frac{6\Delta+12}{7\Delta+11} = \frac{6(\Delta+2)}{7\Delta+11}$$

Product:

$$\frac{\Delta^2 + 2\Delta + 2}{\Delta(7\Delta+11)} 6 \qquad (\Delta+2)'s \; cancel$$

Feedback:
$$\left(\frac{6\Delta^2 + 12\Delta + 12}{13\Delta^2 + 23\Delta + 12} \right)$$