

#Jenny



Finally I get this ebook, thanks for all these I can get now!

#Rio



Cool! I'am really happy

#Markus Jensen



I did not think that this would work, my best friend showed me this website, and it does! I get my most wanted eBook

#Hun Tsu



wtf this great ebook for free?!

#Che Salsa



My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler



so many fake sites. this is the first one which worked! Many thanks

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Chapter 8 Solutions

8.1 Missing

8.2

From the block diagram

$$y(s) = g_1(s)u(s) + g_2(s)u(s)$$

$$\text{and } u(s) = \frac{y(s)}{1 - g_1(s)}$$

but

$$\frac{y(s)}{1 - g_1(s)} = \frac{y(s)}{1 - g_1(s)}$$

$$\text{then } \frac{y(s)}{1 - g_1(s)} = \frac{y(s)}{1 - g_1(s)}$$

$$\text{and } \frac{y(s)}{1 - g_1(s)} = \frac{y(s)}{1 - g_1(s)}$$

$$y(s) = \frac{g_1(s)y(s)}{1 - g_1(s)} + \frac{g_2(s)y(s)}{1 - g_1(s)}$$

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Using an all-pole factorization, we have that

$$g_1(s) = \frac{(-2s + 1)(-5s + 1)e^{-10s}}{(s + 1)(s + 1)}$$

$$g_2(s) = \frac{1.75(s + 1)(5s + 1)}{(10s + 1)(s + 1)^2}$$

$$g_3(s) = \frac{1.75(s + 1)(5s + 1)}{(10s + 1)(s + 1)^2}$$

thus, our overall proper controller is

$$g(s) = \frac{(10s + 1)(s + 1)^2}{1.75(s + 1)(5s + 1)e^{-10s}}$$

b. If the model is perfect, then the transfer function is

$$g(s) = \frac{g_1(s)g_2(s)}{1 - g_1(s)}$$

$$= \frac{(-2s + 1)(-5s + 1)e^{-10s}}{(s + 1)(s + 1)} \cdot \frac{1.75(s + 1)(5s + 1)}{(10s + 1)(s + 1)^2}$$

The sketch of  $g(s)$  should look like Figure 8-1.

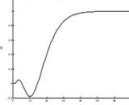


Figure 8-1. Plot for 8.3

8.4

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