

#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

## Solutions to Skill-Assessment Exercises

### CHAPTER 2

2.1 The Laplace transform of  $t^n$  is  $\frac{n!}{s^{n+1}}$  using Table 2.1, Item 3, Using Table 2.2, Item 4.

$$F(s) = \frac{1}{(s+3)^2}$$

2.2 Expanding  $F(s)$  by partial fraction yields:

$$F(s) = \frac{A}{s+2} + \frac{B}{s+3} + \frac{C}{(s+3)^2}$$

where,

$$A = \frac{10}{(s+2)(s+3)} \Big|_{s=-2} = \frac{5}{s} = \frac{10}{(s+3)} \Big|_{s=-2} = -5$$

$$C = \frac{10}{(s+2)(s+3)} \Big|_{s=-3} = \frac{10}{3} \text{ and } D = (s+3)^2 \frac{dF(s)}{ds} \Big|_{s=-3} = \frac{40}{9}$$

Taking the inverse Laplace transform yields:

$$f(t) = \frac{5}{3}e^{-2t} - \frac{10}{3}e^{-3t} + \frac{40}{9}e^{-3t}t$$

2.3

Taking the Laplace transform of the differential equation assuming zero initial conditions yields:

$$s^2 C(s) + 3sC(s) + 5C(s) = s^2 R(s) + 4sR(s) + 3R(s)$$

Collecting terms,

$$(s^2 + 3s^2 + 5 + 5)C(s) = (s^2 + 4s + 3)R(s)$$

Thus,

$$\frac{C(s)}{R(s)} = \frac{s^2 + 4s + 3}{s^2 + 3s^2 + 5 + 5}$$

[Download PDF version of :](#)  
**Solution Manual Chapter 6 Control System Engineering**