

```
>> Q1.Kp
```

```
ans =
```

```
0.0625
```

```
>> Q1.D
```

```
ans =
```

```
0.0625 s + 1
-----
s
```

Continuous-time transfer function.

```
>> Q2.K
```

```
ans =
```

```
0.1571
```

```
>> Q2.Z
```

```
ans =
```

```
-92.8000
```

```
>> Q2.X
```

```
ans =
```

```
-802.64 s (s-92.8) (s+130) (s+60) (s+57) (s+16) (s+450) (s^2 + 52s + 1352)
```

```
-----
```

```
s (s+57) (s+57.18) (s+130.2) (s+16) (s+450) (s^2 + 11.24s + 51.79)
```

```
(s^2 + 52s + 1352) (s^2 + 56.4s + 1507)
```

Continuous-time zero/pole/gain model.

```
>> Q3.Kp
```

```
ans =
```

```
0.0762
```

```
>> Q3.Kd
```

```
ans =
```

```
8.0342e-04
```

```
>> Q3.D
```

```
ans =
```

```
0.2851 s^2 + 20.81 s + 260
-----
s^2 + 260 s
```

Continuous-time transfer function.

```
>> Q4.Ku
```

```
ans =
```

```
2.1626
```

```
>> Q4.X
```

```
ans =
```

```
1.4619e05 s (s+57)^2 (s+60) (s+130) (s+260) (s+450) (s+16)^2 (s^2 + 52s + 1352)
-----
s (s+260) (s+254.9) (s+450.7) (s+139.6) (s+57)^2 (s+33.71) (s+16)^2
(s^2 + 52s + 1352) (s^2 + 13.07s + 949)
```

Continuous-time zero/pole/gain model.

```
>> Q5.Ku
```

```
ans =
```

```
3.3179
```

```
>> Q5.X
```

```
ans =
```

```
1.5129e05 s (s+57) (s+60) (s+130) (s+260) (s+450) (s+16) (s^2 + 52s + 1352)^2
```

---

$$\frac{s (s+260) (s+254.1) (s+450.7) (s+143.1) (s+58.17) (s+57) (s+16)}{(s^2 + 6.938s + 557.2) (s^2 + 52s + 1352)^2}$$

Continuous-time zero/pole/gain model.

>> Q6.K

ans =

0.5972

>> Q6.Z

ans =

-24.0000 + 0.5000i -24.0000 - 0.5000i

>> Q6.X

ans =

1.2779e05 (s+60) (s+130) (s+450) (s^2 + 48s + 576.3)

---

$$(s+450.6) (s+255) (s+141) (s+57.8) (s^2 + 29.3s + 260.5) (s^2 + 31.3s + 1060)$$

Continuous-time zero/pole/gain model.

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