This sheet calculates the PIDController computeCorrection method
1. Set the Kp, Ki, and Kd
2. Plug in a setPoint, processVariable, and time
3. See the output, then copy the whole line down and go to 2

**Basic Kp Accel/Decell**

| output | **setPoint** | **processVariabl** | **time** | *Kp* | *Ki* | *Kd* | dt | error | integral-new | derivative | previousErr | integral | previousTime |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| startpoint | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 25 | 5 | 0 | 2 | 5 | 0 | 0 | 1 | 5 | 5 | 5 | 5 | 5 | 2 |
| 0 | 5 | 5 | 3 | 5 | 0 | 0 | 1 | 0 | 5 | -5 | 0 | 5 | 3 |
| -25 | 0 | 5 | 4 | 5 | 0 | 0 | 1 | -5 | 0 | -5 | -5 | 0 | 4 |
| 0 | 0 | 0 | 5 | 5 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 5 |

**Basic Ki Accel/Decell**

| output | **setPoint** | **processVariabl** | **time** | *Kp* | *Ki* | *Kd* | dt | error | integral-new | derivative | previousErr | integral | previousTime |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| startpoint | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 25 | 5 | 0 | 2 | 0 | 5 | 0 | 1 | 5 | 5 | 5 | 5 | 5 | 2 |
| 25 | 5 | 5 | 3 | 0 | 5 | 0 | 1 | 0 | 5 | -5 | 0 | 5 | 3 |
| 0 | 0 | 5 | 4 | 0 | 5 | 0 | 1 | -5 | 0 | -5 | -5 | 0 | 4 |
| -25 | 0 | 5 | 5 | 0 | 5 | 0 | 1 | -5 | -5 | 0 | -5 | -5 | 5 |
| 0 | 0 | -5 | 6 | 0 | 5 | 0 | 1 | 5 | 0 | 10 | 5 | 0 | 6 |
| 0 | 0 | 0 | 7 | 0 | 5 | 0 | 1 | 0 | 0 | -5 | 0 | 0 | 7 |

**Basic Kd Accel/Decell**

| output | **setPoint** | **processVariabl** | **time** | *Kp* | *Ki* | *Kd* | dt | error | integral-new | derivative | previousErr | integral | previousTime |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| startpoint | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 25 | 5 | 0 | 2 | 0 | 0 | 5 | 1 | 5 | 5 | 5 | 5 | 5 | 2 |
| -25 | 5 | 5 | 3 | 0 | 0 | 5 | 1 | 0 | 5 | -5 | 0 | 5 | 3 |
| 0 | 5 | 5 | 4 | 0 | 0 | 5 | 1 | 0 | 5 | 0 | 0 | 5 | 4 |
| -25 | 0 | 5 | 5 | 0 | 0 | 5 | 1 | -5 | 0 | -5 | -5 | 0 | 5 |
| 25 | 0 | 0 | 6 | 0 | 0 | 5 | 1 | 0 | 0 | 5 | 0 | 0 | 6 |
| 0 | 0 | 0 | 7 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 7 |