ANSWER KEY - LABORATORY EXERCISE 8
PID CONTROLLER CHARACTERISTICS

2. PROPORTIONAL MODE DEMONSTRATION

2.2   Gain and Proportional Band Features

What value and what name …
Value: 50%   Name: Proportional Band

Process variable: 55
Set Point: 55
Controller output: 35

PBtop Calculated: 72.5   Observed: 72.5

PBbot Calculated: 22.5   Observed: 22.5

Did the PB bar move as expected?   Yes

Calculate the theoretical controller output   55

Does the theoretical output agree with the observed output? Yes

… to go to zero?   82.5   … to go to 100%?   32.5

        PV value of 82.5.   Controller output   0%

        PV value of 32.5.   Controller output   100%

Visual estimate of the fraction of PB down from PBtop to the PV value:

                                                                     25%

Does this (approximately) agree with the controller output? Yes

2.3   Closed Loop Proportional Mode Response

        PV   62.5

        SP   65

        Controller output   40

Does this agree with the observed output?   Yes

Which way, increase or decrease, should the Manual Reset be adjusted…?

	Incr
Final value of Manual Reset:	41.65
Final value of Controller output:	41.66
Did the PB bar move ...?	Yes