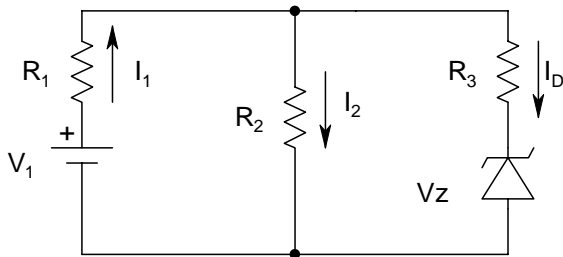


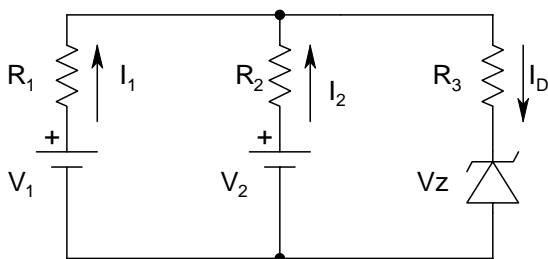
Supplementary Diode Exercises, PHYS 3500/8800

1. For the voltages (V_1 , and V_z) and the resistances (R_1 , R_2 , and R_3) listed in the table below, calculate the currents I_1 , I_2 , and I_D for the circuit shown to the left.



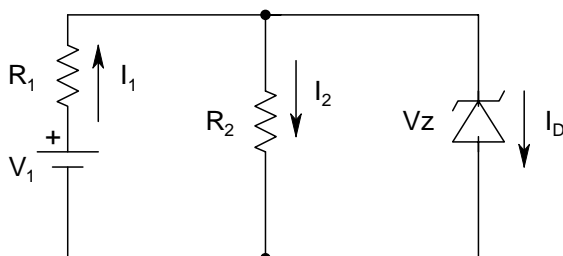
Data					Answers		
V_1	V_z	$R_1 (\Omega)$	$R_2 (\Omega)$	$R_3 (\Omega)$	$I_1 (ma)$	$I_2 (ma)$	$I_D (ma)$
15	5	750	450	250	12.94	11.76	1.18
10	6	100	75	050	57.15	57.15	0.00
24	6	150	75	450	108.00	104.00	4.00
18	12	300	150	250	40.00	40.00	0.00
24	12	750	250	450	24.00	24.00	0.00
24	6	750	500	450	21.12	16.32	4.80

2. For the voltages (V_1 , V_2 , and V_z) and the resistances (R_1 , R_2 , and R_3) listed in the table below, calculate the currents I_1 , I_2 , and I_D for the circuit shown to the left.



Data						Answers		
V_1	V_2	V_z	$R_1 (\Omega)$	$R_2 (\Omega)$	$R_3 (\Omega)$	$I_1 (ma)$	$I_2 (ma)$	$I_D (ma)$
15	24	5	750	450	250	3.53	25.88	29.41
10	15	12	100	75	50	-24.62	33.84	9.24
24	5	6	150	75	450	88.00	-77.33	10.67
9	12	12	300	150	450	-6.67	6.67	0.00
24	18	6	750	500	450	12.48	6.72	19.20
12	18	9	750	500	450	-1.28	10.08	8.80

3. For the voltages (V_1 , and V_z) and the resistances (R_1 and R_2) listed in the table below, calculate the currents I_1 , I_2 , and I_D for the circuit shown to the left.



Data					Answers		
V_1	V_z	$R_1 (\Omega)$	$R_2 (\Omega)$	$I_1 (ma)$	$I_2 (ma)$	$I_D (ma)$	
15	12	250	750	15.00	15.00	0.00	
24	9	100	150	150.00	60.00	90.00	
9	12	150	450	15.00	15.00	0.00	
12	5	300	500	23.33	10.00	13.33	
18	6	500	750	24.00	8.00	16.00	
18	12	250	750	24.00	16.00	8.00	