Sample Problems With Three Resistors

Worksheet (KEY)



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| VS | R1 | R2 | R3 |

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| 1. | VS = 8 V, R1 = 200 Ω, R2 = 400 Ω, R3 = 400 Ω, Solve for RT and IT | **(R** | **T** | **= 100 Ω, I** | **T** | **= 80 mA)\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| 2. | VS = 15 V, R1 = 330 Ω, R2 = 470 Ω, R3 = 250 Ω, Solve for RT and IT |  | **(R** | **T** | **= 109.2 Ω, I** | **T** | **= 137.37 mA)\_\_\_\_\_\_** |  |

1. VS = 15 V, R1 = 2.7 kΩ, R2 = 4.5 kΩ, R3 = 6.2 kΩ, Solve for RT and IT **(RT** **= 1326.5 Ω, IT** **= 11.3 mA)\_\_\_\_\_\_\_\_**

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| 4. | VS = 9 V, R1 = 15 kΩ, R2 = 8.6 kΩ, R3 = 6 kΩ, Solve for RT and IT | **(R** | **T** | **= 2.86 kΩ, I** | **T** | **= 3.15 mA)\_\_\_\_\_\_\_\_\_** |  |
| 5. | IT = 25 mA, R1 = 4 kΩ, R2 = 4 kΩ, R3 = 2 kΩ, Solve for Vs | **(V** | **S** | **= 25 V)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |
| 6. | IT = 8 mA, R1 = 1.2 kΩ, R2 = 3.75 kΩ, R3 = 2 kΩ, Solve for Vs | **(V** | **S** | **= 5 V)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

1. IT = 20 mA, R1 = 1.2 kΩ, R2 = 3 kΩ, R3 = 2 kΩ, Solve for I1, I2, and I3 **(I1** **= 10 mA, I2** **= 4 mA, I3** **= 6 mA)\_\_**
2. IT = 15 mA, R1 = 4 kΩ, R2 = 12 kΩ R3 = 6 kΩ, Solve for I1, I2, and I3 **(I1** **= 7.5 mA, I2** **= 2.5 mA, I3** **= 5 mA)\_**

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| 9. | VS = 20 V, IT = 100 mA, I2 = 20 mA, I3 = 30 mA, Solve for R1 |  |  |  | **(R** | **1** | **= 400 Ω)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |  |
| 10. | VS = 35 V, IT = 20 mA, I2 = 10.89 mA, I3 = 5.93 mA, Solve for R1 |  |  |  | **(R** | **1** | **= 11 kΩ)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |  |  |
| 11. | VS = 18 V, IT = 6.2 mA, R1 = 15 kΩ, R3 = 9 kΩ, Solve for R2 |  |  | **(R** | **2** | **= 6 kΩ)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |  |
| 12. | VS = 10 V, IT = 69.5 mA, R1 = 330 Ω, R3 = 560 Ω, Solve for R2 | **(R** | **2** | **= 470 Ω)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |
| 13. | IT = 11.1 mA, R1 = 14.4 kΩ, I1 = 2.5 mA, R3 = 10 kΩ, Solve for R2 |  | **(R** | **2** | **= 7.2 kΩ)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |  |
| 14. | V1 = 9 V, R1 = 3 kΩ, I2 = 2.5 mA, I3 = 3.6 mA Solve for R2 and R3 |  |  | **(R** | **2** | **= 3.6 kΩ, R** | **3** | **= 2.5 kΩ)\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |