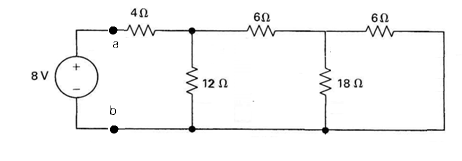
ENGR 12 PRACTICE TEST 1 SOLUTIONS

These are representative problems. The actual test will be shorter, but you should expect a number of short drill type questions with 1 or two extended problems similar to the material covered in these examples.

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| 1. The power associated with the 8A Current Source is    1. 256 W, producing 🡸    2. 704 W, absorbing    3. 576 W, producing    4. 384 W, absorbing |  |

1. For the following circuit, the voltage drop across the 12 Ohm Resistor in Volts is:
   1. 2.57142 b. 4.66666 🡸 c. 5.45454 d. 5.76

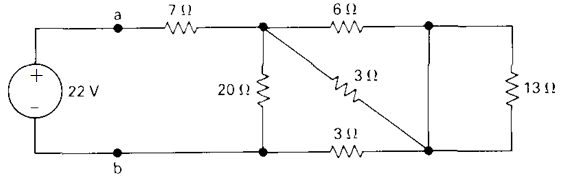


1. For the following circuit, it has been determined that ia = 1 Amp and ib = 0.5 Amps. Using KVL, OL and KCL, find vc, ic and then id. Ignore all other components except those that are labeled.

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| The value of id in Amps is   1. 0.06 2. 0.3 3. — 0.1 🡸 4. 0.22   Vc = 10V  Ic = .4A  Id = -0.1A |  |

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| 1. If the interconnections of ideal sources are valid,    1. Identify which sources are developing and which sources are releasing power    2. Verify that the total power developed in the circuit equals the total power absorbed   60V: P=480 Absorbing  20V: P=160 Producing  8A: P = 320 Producing |  |

1. For the following circuit
   1. Find Rab for the resistive network shown (HINT: it’s a whole number, no decimal)
   2. Find the total power delivered by the voltage source
   3. Find the voltage drop across the 20 Ohm Resistor



TRICK! 13 || 0 (short) = 0, so remove 13 Ohm resistor  
a) Rab = 7 + 20||( 6||3 + 3) = 7 + 20||5 = 11

b) Itotal = 22/11 = 2A, P = 2\*22 = 44W

c) Reff = 20||5 = 4 Ohms, so V20 = 4\*22/(11) = 8V

1. For the following circuit, it has been determined that ia = .5 Amps. Using KCL, KVL and OL,

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| * 1. Find vb = 16   2. Find ib = 0.5   3. Find ic = 1   4. Find vd = 28   5. Find ie = 3   6. The power delivered by the 40V source = 120W |  |

Hint: Answers to d, e, and f should be whole numbers