1.32 Calculate the power absorbed by each element in the circuit in Fig. P1.32.

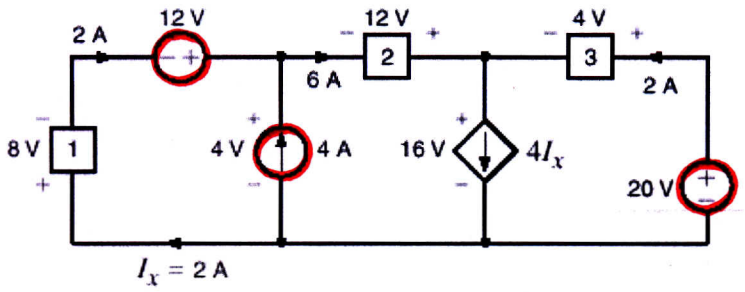

Figure P1.32

SOLUTION:

$P_{12V} = -12(2) = -24$ W

$P_{12V} = 24$ W supplied

$P_{4A} = 4(-4) = -16$ W

$P_{4A} = 16$ W supplied

$P_2 = -12(6) = -72$ W

$P_2 = 72$ W supplied

$P_3 = 4(2) = 8$ W absorbed

$P_{20V} = -20(2) = -40$ W

$P_{20V} = 40$ W supplied

$P_1 = 8(2) = 16$ W absorbed

KCL: $6 + 2 = 4I_x$

$I_x = 2$ A

$P_{4I_x} = 4I_x\,(16)$

$P_{4I_x} = 4(2)(16)$

$P_{4I_x} = 128$ W absorbed