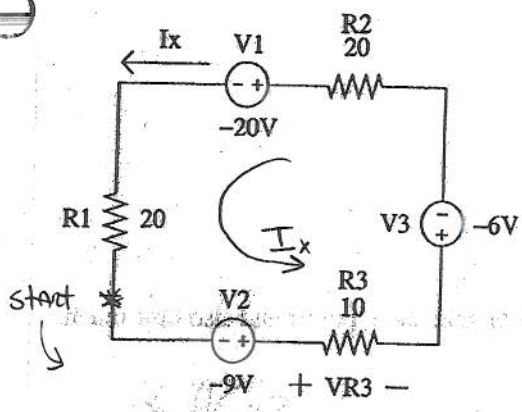
15. Using KVL methods, find the following:

1. VR3
2. Ix
3. PV2



solution:

- using Ix direction so we can solve directly for VR3. Also summing CCW.

KVL: $-(-9) + 10I_x - 6 + 20I_x - 20 + 20I_x = 0$

$\cancel{9} + 10\cancel{I_x} - \cancel{6} + 20\cancel{I_x} - \cancel{20} + 20\cancel{I_x} = 0$

$50 I_x = 17$

$I_x = 17/50$

$\boxed{I_x = .34A}$

VR3: $V_{R3} = I_x(10)$

$\boxed{V_{R3} = 3.4V}$

P(V2): $I_x \uparrow \downarrow I = -0.34$

$-9V$

$P = (-0.34)(-9)$

$\boxed{P_{(V2)} = 3.06W \text{ (diss)}}$

ANS: VR3 = 3.4V

Ix = .34A

P = 3.06W (DISS)