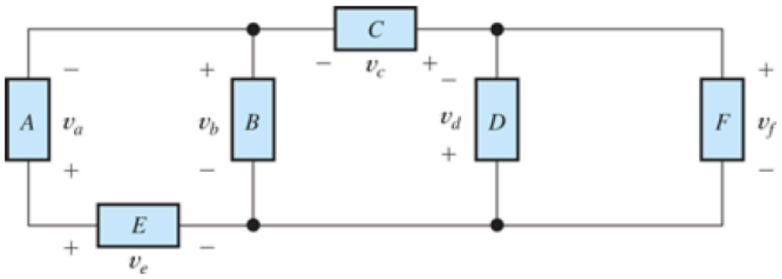
Consider the circuit in figure. Which elements are in parallel here? 2 points



- A,B,D, and F are in parallel
- D and F are in parallel ✓
- B,C and F are in parallel
- B,C and D are in parallel

Which elements are in series? 2 points

- A and E are in series ✓
- D and F are in series
- C and F are in series
- B and C are in series

What is the relationship between vd and vf (note the polarity defined in the figure) 2 points

- vd = vf
- vd = -vf ✓
- can't be determined

Given that va=10 V, vc=15 V, and ve= 20 V, determine values of vb and vf? 4 points

Applying KVL in the loop containing A, B, E

$v_a + v_b - v_e = 0$
10 + v_b-20 = 0
$=> \ v_b = 10$

Applying KVL in the loop containing A, C, F and E
$v_a - v_c + v_f - v_e = 0$
10 – 15+v_f-20 = 0

=>v_f=25 V

vb=10 V and vf=25 V ✓