Predicate Logic Assignment

Connectives:
[~] not, it is not the case that, it is false that
[•, &] and, yet, but, however, moreover, nevertheless, still, also, although, both, additionally, furthermore
[v] or, unless
[⊃] if…then, implies, given that, in case, provided that, on condition that
[≡] if and only if, is equivalent to, sufficient and necessary condition for

PL Key

Fx : x is funny
Tx : x is tall
Lxy : x loves y
Dx : x is a dancer
Sx : x is a singer
Px : x is a politician
q = Shaq
b = LeBron James
h = Hillary Clinton
m = Mike
c = Cody

Section 1

Translate the following english sentences into PL notation:

1. Cody is funny
2. Cody is tall
3. Shaq is a singer
4. Cody is tall and Cody is funny
5. Cody is both tall and funny
6. Hillary Clinton is a politician and Cody is funny
7. LeBron James is not a dancer
8. LeBron James is not funny and Shaq is tall
9. Mike is tall or Shaq is a singer
10. Hillary Clinton is a singing politician
11. If Cody is a dancer, then Mike is funny
12. If Cody is not a singer, then LeBron James is a tall dancer
13. Hillary Clinton is funny if and only if Shaq is a politician
14. If Mike is a funny politician, then Cody is not a singer
15. If Hillary is not a politician, then Cody is not tall
16. It is not the case that LeBron is both tall and funny

17. Shaq is not a politician or Cody is not a singer
18. Hillary Clinton and Shaq are both tall
19. Hillary Clinton loves LeBron James
20. If Hillary Clinton loves LeBron James, then Shaq does not love Cody

Section 2

Translate the following PL statements into english:

1. Tc
2. ~Tm
3. Fs & Db
4. Ph v Dm
5. ~Fc & ~Sh
6. Ps ⊃ Ts
7. (Fb & Db) ⊃ Pm
8. (Ph v Dm) & ~Tm
9. Lmc ⊃ Tb
10. ~Pc ⊃ ~Lqh