c. $x \wedge \neg(y \wedge (x \vee z))$

x	y	z	$x \vee z$	$y \wedge (x \vee z)$	$\neg(y \wedge (x \vee z))$	$x \wedge (\neg(y \wedge (x \vee z)))$
T	T	T	T	T	F	F
T	T	F	T	T	F	F
T	F	T	T	F	T	T
T	F	F	T	F	T	T
F	T	T	T	T	F	F
F	T	F	F	F	T	F
F	F	T	T	F	T	F
F	F	F	F	F	T	F

2. Prove each of the following, first using logical equivalences, then again using truth tables.

   a. Disregard.

   Below are solutions for the proofs using logical equivalences, To prove tautology with truth tables, show the right column of table contains all "T" values, To prove contradiction, show all "F" values,

   b. $((x \wedge (y \vee z)) \vee (\neg x)) \vee \neg(y \wedge z)$ is a tautology.

$$(((x \wedge y) \vee (x \wedge z)) \vee (\neg x)) \vee \neg(y \wedge z)$$ Distibutive Law

$$((x \wedge y) \vee ((x \wedge z) \vee \neg x)) \vee \neg(y \wedge z)$$ Assoc. Law

$$((x \wedge y) \vee ((x \vee \neg x) \wedge (z \vee \neg x))) \vee \neg(y \wedge z)$$ Distributive Law

$$((x \wedge y) \vee (T \wedge (z \vee \neg x))) \vee \neg(y \wedge z)$$ Tautology

$$((x \wedge y) \vee (z \vee \neg x)) \vee \neg(y \wedge z)$$ Identity

$$(((x \wedge y) \vee (\neg x)) \vee z) \vee \neg(y \wedge z)$$ Assoc., Commutative

$$(((x \wedge y) \vee (\neg x)) \vee z) \vee (\neg y \vee \neg z)$$ De Morgan's

$$(((x \wedge y) \vee (\neg x)) \vee (\neg y)) \vee (z \vee \neg z)$$ Assoc., Commutative

$$(((x \wedge y) \vee (\neg x)) \vee (\neg y)) \vee T$$ Tautology