

25. a. $A(x)$: x is Monday D : Days of Week

$B(x)$: x is Tuesday

b. $P(x)$: x lives after y D : People

26. a. $(\exists x)A(x) \leftrightarrow ((\forall x)[A(x)]')'$

$(\exists x)A(x) \leftrightarrow (\forall x)'[A(x)]''$

$(\exists x)A(x) \leftrightarrow (\exists x)A(x)$

✓
Valid

b. D : Colors

$P(x)$: x is purple

$Q(x)$: x is red

Not Valid

All colors are purple or there is a color that is red doesn't mean that all colors are purple or red.

✓
Good

#26 a) Valid \rightarrow Since the iff is nested twice we get the original statements. ✓ maybe write this out!

b) Invalid. EX: Domain = Integers

$P(x) - x > 5$

Gives us: $F \vee T \rightarrow F$

$Q(x) - x < 5$

$T \rightarrow F$

\hookrightarrow Invalid

Good