

2.25 Let variables S represent a package being small, H being heavy, and E being expensive. Let's consider a package that is not small as big, not heavy as light, and not expensive as inexpensive. Write a Boolean equation to represent the following:

- You can deliver packages only if the packages are either small and expensive, or big and inexpensive.
- You can NOT deliver a package that is listed above. Use algebra to simplify the equation to sum of products.
- You can load the packages into your truck only if the packages are small and light, small and heavy, or big and light. Simplify the equation.
- You can NOT load the packages described above. Simplify to sum of products.

a) Deliver =  $SE + S'E'$

b) Deliver =  $(SE + S'E')' = (SE)'(S'E')' = (S' + E')(S + E) = S'E + SE'$

c) Load =  $SH' + SH + S'H' = SH' + SH + SH' + S'H' = S + H'$

d) Load =  $(S + H')' = S'H$