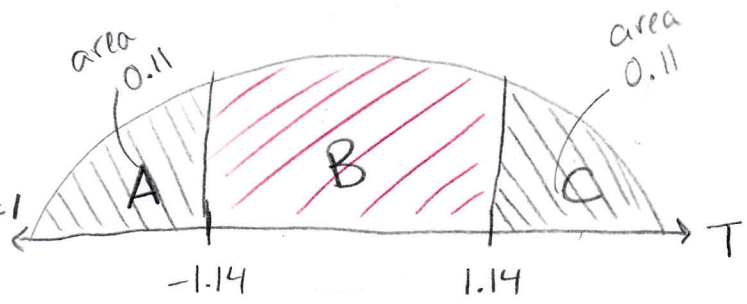
HW 5.1.22 Suppose T, Z are random variables.

a) $P(T > 1.14) = 0.11$ and $P(T < -1.14) = 0.11$

Find $P(-1.14 < T < 1.14)$



total area under curve = 1

$A + B + C = 1$

Soln Key: total area under curve $= 1$

$P(T < -1.14) + P(-1.14 < T < 1.14) + P(T > 1.14) = 1$

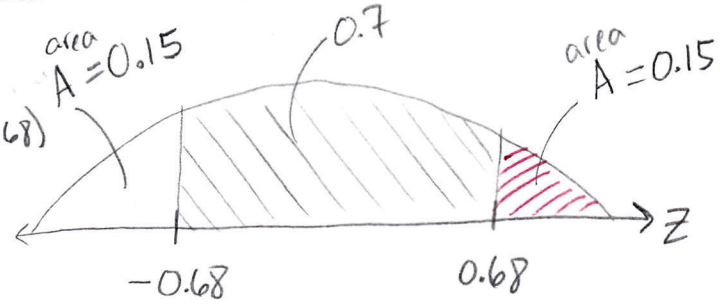
$0.11 + P(-1.14 < T < 1.14) + 0.11 = 1$

$0.22 + P(-1.14 < T < 1.14) = 1$

$P(-1.14 < T < 1.14) = 0.78$

b) $P(-0.68 \leq Z \leq 0.68) = 0.7$ and $P(Z > 0.68) = P(Z < -0.68)$

Find $P(Z > 0.68)$



$1 = P(Z < -0.68) + P(-0.68 \leq Z \leq 0.68) + P(Z > 0.68)$

$1 = P(Z < -0.68) + 0.7 + P(Z > 0.68)$

$0.3 = P(Z < -0.68) + P(Z > 0.68)$

$0.3 = P(Z > 0.68) + P(Z > 0.68)$

$0.3 = 2P(Z > 0.68)$

$0.15 = P(Z > 0.68)$