1.0

0

.55

0

.35

0

.20

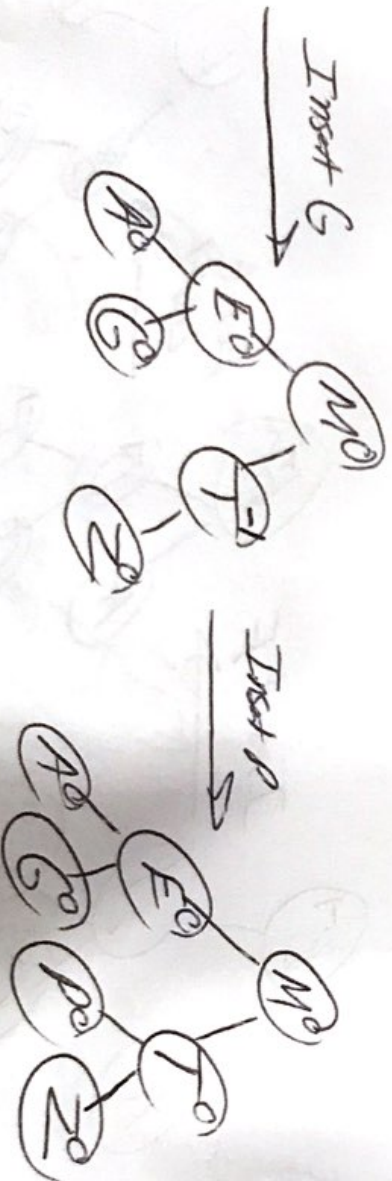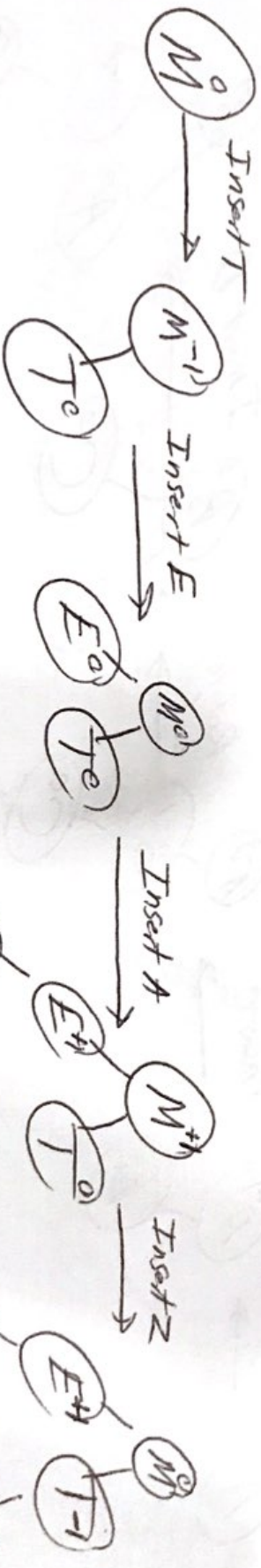0   1

.1   .1   .15   .2   .45
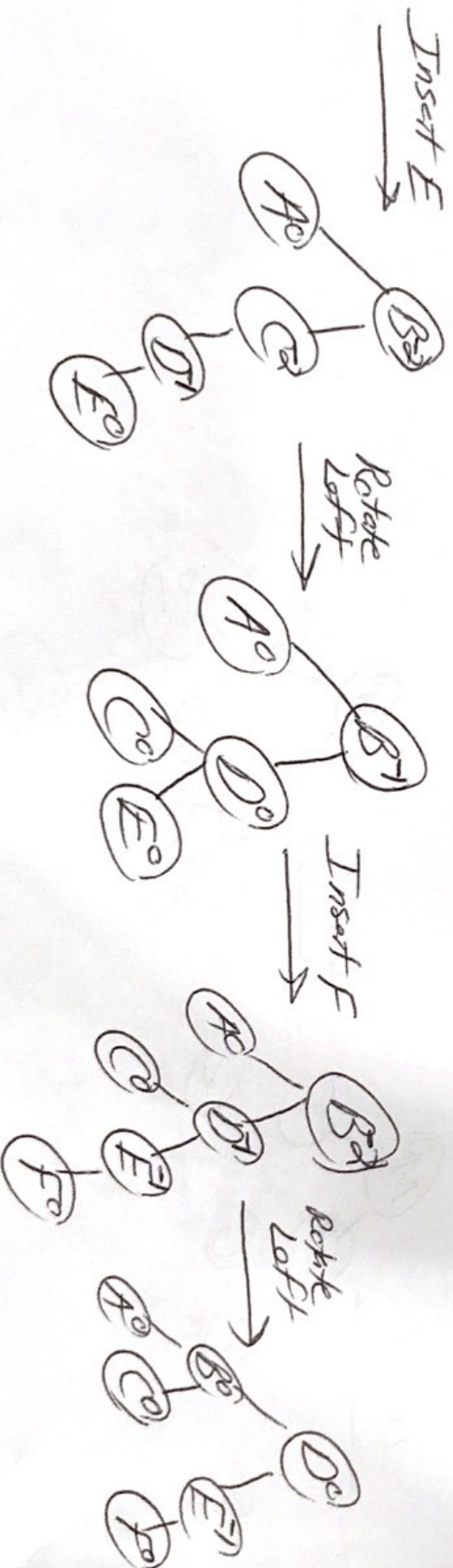B   C   D   A   E

Section 5.2 AVL Tree Examples

1) Insert M, T, E, A, Z, G, P

3) Insert: A, B, C, D, E, F

A^0 $\xrightarrow{\text{Insert } B}$ A^{-1} — B^0 $\xrightarrow{\text{Insert } C}$ A^{-2} — B^{-1} — C^0 $\xrightarrow{\text{Rotate Left}}$ B^0 — A^0, C^0 $\xrightarrow{\text{Insert } D}$ B^{-1} — A^0, C^{-1} — D^0

$\xrightarrow{\text{Insert } E}$ B^{-2} — A^0, C^{-2} — D^{-1} — E^0 $\xrightarrow{\text{Rotate Left}}$ B^{-1} — A^0, D^0 — C^0, E^0 $\xrightarrow{\text{Insert } F}$ B^{-2} — A^0, D^{-1} — C^0, E^{-1} — F^0 $\xrightarrow{\text{Rotate Left}}$ D^0 — B^0 — A^0, C^0; E^{-1} — F^0

#3) Insert A, Z, B, Y, C, X, D, W, E, V, F

A^c —Insert Z→ A^r —Insert B→ A^a —Rotate Right+Left→ B^o —Insert Y→ B^r

Rotate Right+Left

Insert C

Rotate Right

Insert X

Rotate Right+Left
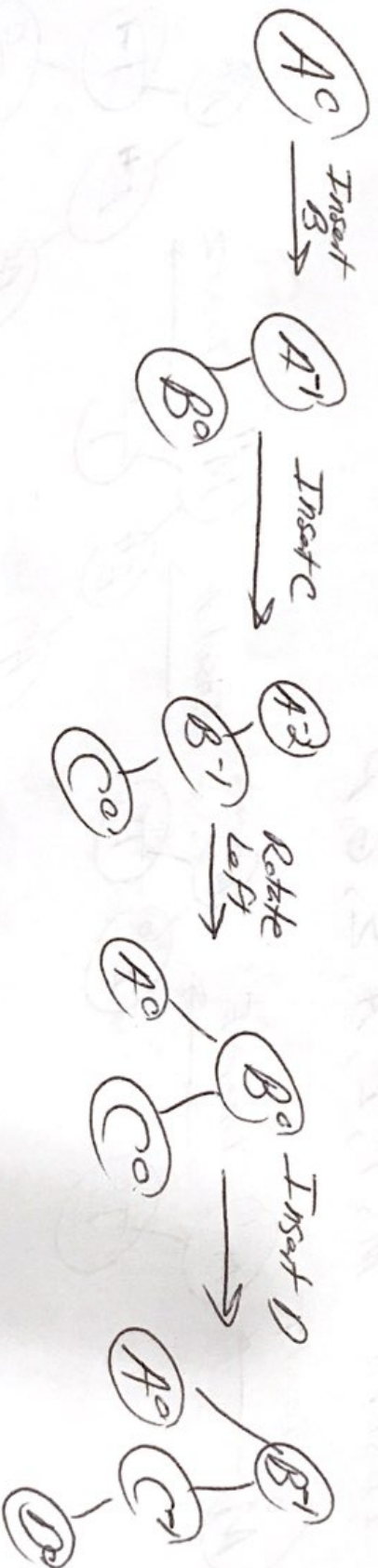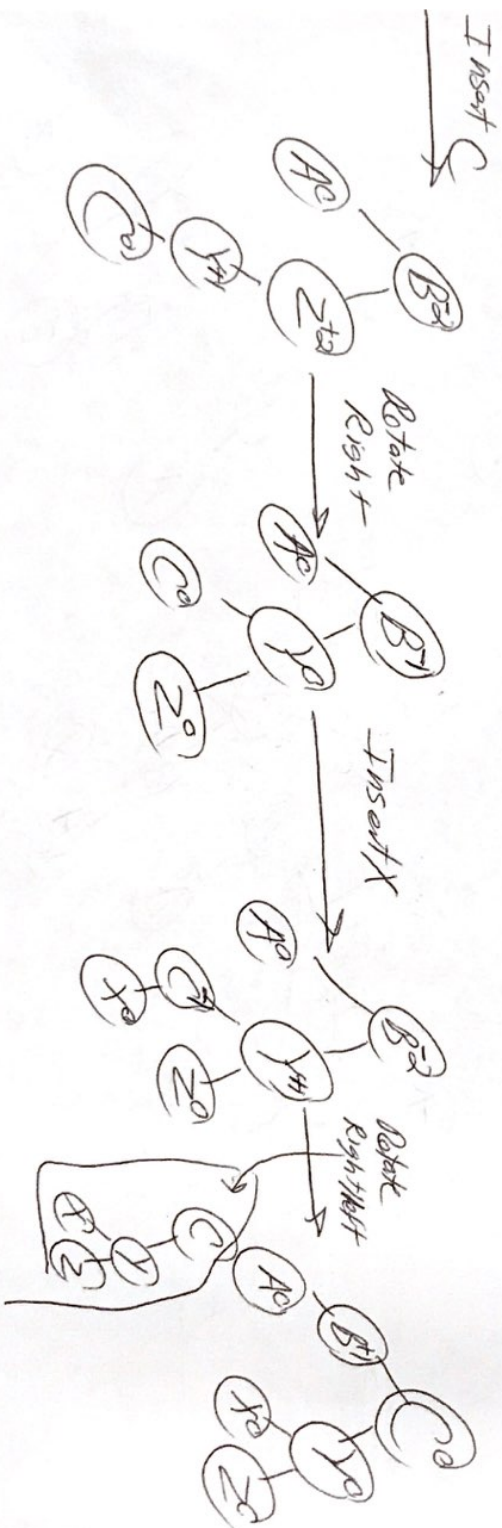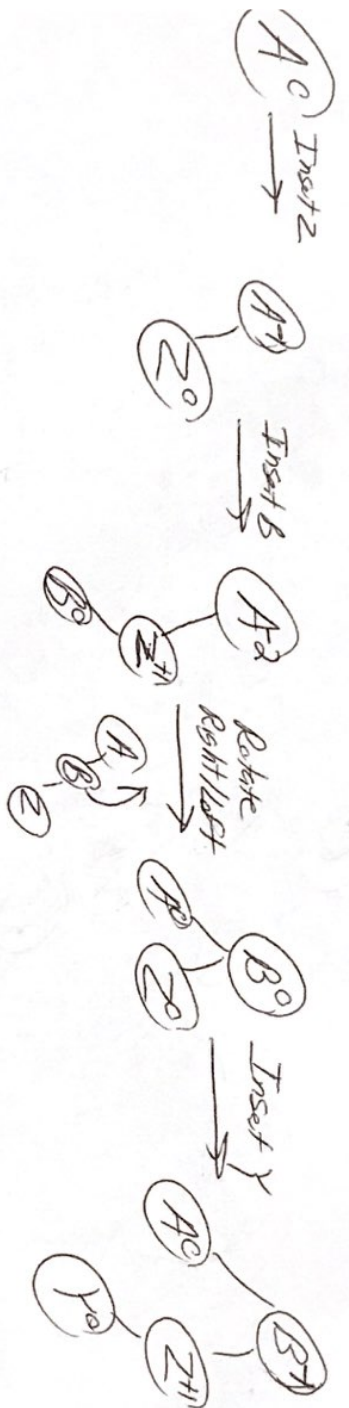
Practice Finish Insert D, W, E, V, F

AVL tree operations diagram showing:

Insert D → Insert W → Left/Right Rotate → Insert E → Rotate Right → Insert V → Rotate Left → Insert F → Right/Left Rotate