Engineer is evaluating lease options for an office. two locations are available with the following terms. MARR = 15%.

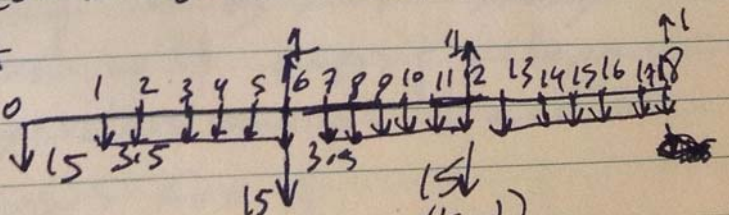
	Location A	Location B
First cost	-15K	-18 K
Annual cost	-3.5K	-3.1 K
Deposit return	$1 K	$2 K
Duration	6 years	9 years

Which location should be leased?

a) assuming LCM analysis is reasonable.

LCM = 18 years.

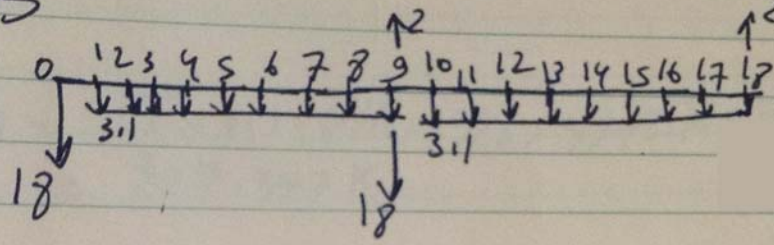
Cash flows over LCM for A



$$PW_A = -15 - 3.5(P/A, 15\%, 18) - 14[(P/F, 15\%, 6) + (P/F, 15\%, 12)] + 1[(P/F, 15\%, 18)]$$

$$-15 - \frac{3.5}{0.15}\left(1 - 1.15^{-18}\right) - 14\left(1.15^{-6} + 1.15^{-12}\right) + 1.15^{-18} = \$-45{,}036 \text{ K}$$

For B



$$PW_B = -18 - 3.1(P/A, 15\%, 18) - 16(P/F, 15\%, 9) + 2(P/A, 15\%, 18)$$

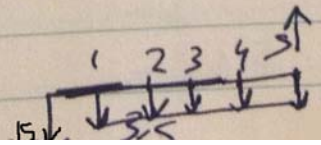
$$= -18 - \frac{3.1}{0.15}\left(1 - 1.15^{-18}\right) - 16 * 1.15^{-9} + 2 * 1.15^{-6}$$

$$= \$-41.384$$

Choose location B.

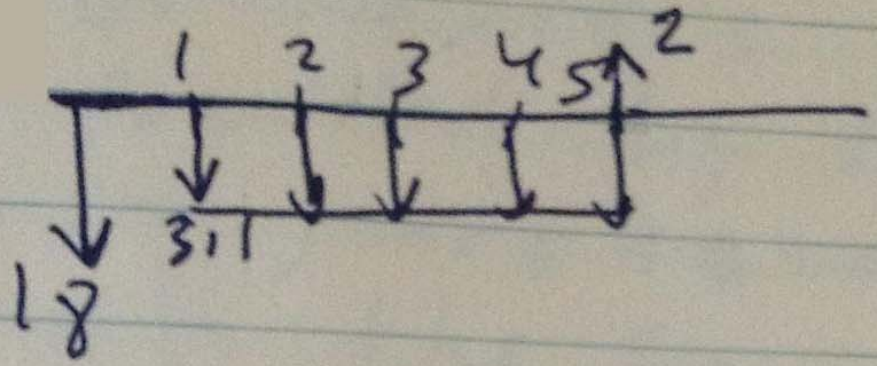
(b) assume a 5-year study period with deposit returns (salvage values) of \$1- and \$2K-

cash flows for A



$PW_A = -15 - 3.5(P/A, 15\%, 5) + (P/F, 15\%, 5) = -26{,}236$

B, cashFlows,



$PW_B = -18 - 3.1(P/A, 15\%, 5) + 2(P/A, 15\%, 5)$

$= \$27.397\,K$

Choose location A.