* Missionaries & Cannibals Problem

M	C	1	0	Target	M	C
000	xxx					

(M, C, O)

$(3, 3, \textcircled{1})$ $\xrightarrow{\text{1M1C}}$

00 xx $\xrightarrow{(2,2,0)}$ o x

00 x x $\xleftarrow{\text{1M}}$ x

000 xx $\xrightarrow{2C}$ x
$(3,2,1)$

000 $\xrightarrow{(3,0,0)}$ x x x

000 x $\xrightarrow{(3,1,1)}$ x x

o x $\xrightarrow{2M}$ x x

o x $\xrightarrow{(1,1,0)}$ oo xx

00 xx $\xleftarrow{\text{1C1M}}$ o x

OO   XX $\cdot \xrightarrow{\text{2M}}$ O   X
$$(\mathbf{0},2,0)$$

XX $\xleftarrow{\text{1C}} \cdot$ O OO X
$$(0,3,1)$$

XXX $\cdot \xrightarrow{\text{2C}}$ OOO
$$(0,1,0)$$

X $\xleftarrow{\text{1C}} \cdot$ OOO XX
$$(0,2,1)$$

XX $\cdot$ _____   OOO X

$\cdot \xrightarrow{\text{2C}}$ OOO XX
$$(0,0,0)$$

$\boxed{* \text{ Path cost } = 11}$