A Manufactures Makes toys of A and B. Three machines are needed for this purpose and the time required for each toy on the machine is given by

Types of toys	Machines I	II	III
A	12	18	6
B	6	0	9

Each machine is available for a max of 6 hours per day. If the profit on each toy of type A is Rs 7.50 and that on each toy of type B is Rs 5, show that 15 toys of A and 30 type of B should be manufactured

$12x + 6y \leq 360$ $\quad 2x + y \leq 80$

$18x \leq 360$ $\quad x \leq 20$

$6x + 9y \leq 360$ $\quad 2x + 3y \leq 120$

$Z = 7.5x + 5y$

$2x + y = 80$ $\quad x = 20$ $\quad 2x + 3y = 120$

$(0, 80)$ $(30, 0)$ $\quad (20, 0)$ $\quad (60, 0)$ $(0, 40)$

Points

$(30, 0)$

$(0, 40)$

$(15, 30)$

$Z = 7.5 + 5y$

225

200

$150 + 112.5 = 262.5 \rightarrow$ Max.

$\Rightarrow$ 15 toys of A and 30 toys of B brings maximum value