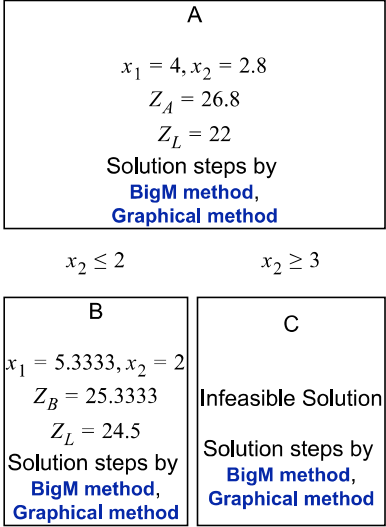


$3x_1 + 5x_2 \leq 26$ $x_1 \geq 4$ $x_2 \leq 2$ and $x_1, x_2 \geq 0$; Solution is Max $Z_B = 25.3333$ $(x_1 = 5.3333, x_2 = 2)$ and $Z_L = 24.5$ ($x_1 = 5, x_2 = 2$) obtainted by the rounded off solution values.	$3x_1 + 5x_2 \leq 26$ $x_1 \geq 4$ $x_2 \geq 3$ and $x_1, x_2 \geq 0$; Solution is This Problem has an infeasible solution, so this branch is terminated.
---	---

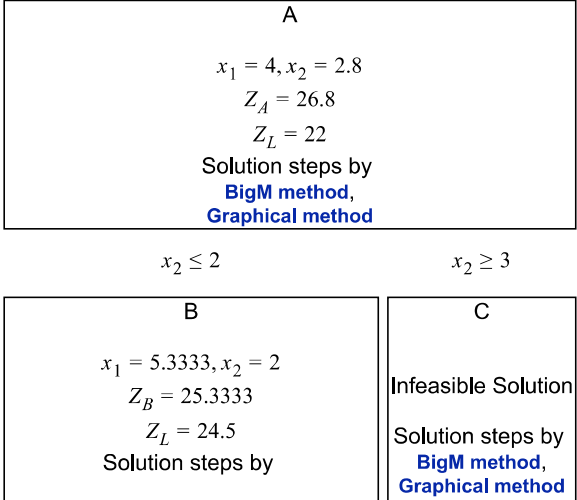
The branch and bound diagram



In Sub-problem B, x_1 (= 5.3333) must be an integer value, so two new constraints are created, $x_1 \leq 5$ and $x_1 \geq 6$

Sub-problem D : Solution is found by adding $x_1 \leq 5$. Solution steps by BigM method, Graphical method Max $Z = 2.5x_1 + 6x_2$ subject to $3x_1 + 5x_2 \leq 26$ $x_1 \geq 4$ $x_2 \leq 2$ $x_1 \leq 5$ and $x_1, x_2 \geq 0$; Solution is Max $Z_D = 24.5$ ($x_1 = 5, x_2 = 2$) and $Z_L = 24.5$ ($x_1 = 5, x_2 = 2$) obtainted by the rounded off solution values. This Problem has integer solution, so no further branching is required.	Sub-problem E : Solution is found by adding $x_1 \geq 6$. Solution steps by BigM method, Graphical method Max $Z = 2.5x_1 + 6x_2$ subject to $3x_1 + 5x_2 \leq 26$ $x_1 \geq 4$ $x_2 \leq 2$ $x_1 \geq 6$ and $x_1, x_2 \geq 0$; Solution is Max $Z_E = 24.6$ ($x_1 = 6, x_2 = 1.6$) and $Z_L = 21$ ($x_1 = 6, x_2 = 1$) obtainted by the rounded off solution values.
---	--

The branch and bound diagram

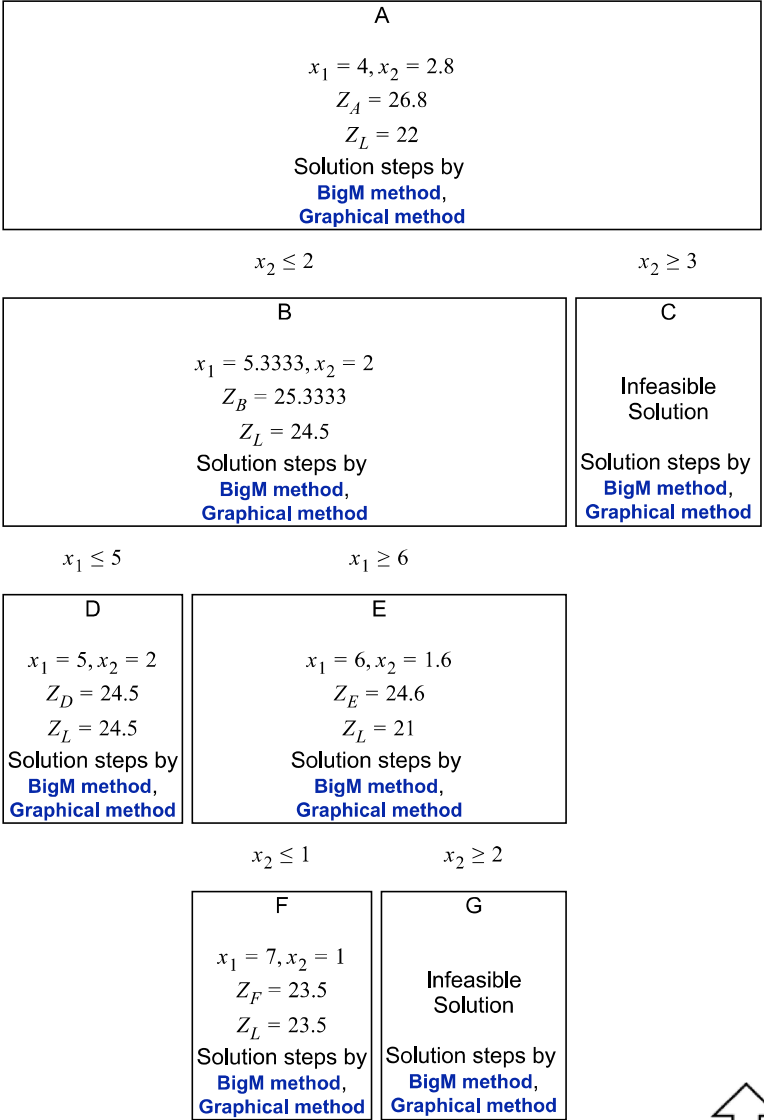


BigM method, Graphical method	
$x_1 \leq 5$	$x_1 \geq 6$
<div>D</div> $x_1 = 5, x_2 = 2$ $Z_D = 24.5$ $Z_L = 24.5$ Solution steps by BigM method, Graphical method	<div>E</div> $x_1 = 6, x_2 = 1.6$ $Z_E = 24.6$ $Z_L = 21$ Solution steps by BigM method, Graphical method

In Sub-problem E, $x_2(= 1.6)$ must be an integer value, so two new constraints are created, $x_2 \leq 1$ and $x_2 \geq 2$

<div>Sub-problem F : Solution is found by adding $x_2 \leq 1$.</div> <div>Solution steps by BigM method, Graphical method</div> <div>Max $Z = 2.5x_1 + 6x_2$</div> <div>subject to</div> <div>$3x_1 + 5x_2 \leq 26$</div> <div>$x_1 \geq 4$</div> <div>$x_2 \leq 2$</div> <div>$x_1 \geq 6$</div> <div>$x_2 \leq 1$</div> <div>and $x_1, x_2 \geq 0$;</div> <div>Solution is</div> <div>Max $Z_F = 23.5 \left(x_1 = 7, x_2 = 1 \right)$</div> <div>and $Z_L = 23.5 \left(x_1 = 7, x_2 = 1 \right)$</div> <div>obtainted by the rounded off solution values.</div> <div>This Problem has integer solution, so no further branching is required.</div>	<div>Sub-problem G : Solution is found by adding $x_2 \geq 2$.</div> <div>Solution steps by BigM method, Graphical method</div> <div>Max $Z = 2.5x_1 + 6x_2$</div> <div>subject to</div> <div>$3x_1 + 5x_2 \leq 26$</div> <div>$x_1 \geq 4$</div> <div>$x_2 \leq 2$</div> <div>$x_1 \geq 6$</div> <div>$x_2 \geq 2$</div> <div>and $x_1, x_2 \geq 0$;</div> <div>Solution is</div> <div>This Problem has an infeasible solution, so this branch is terminated.</div>
--	--

The branch and bound diagram



The branch and bound algorithm thus terminated and the optimal integer solution is :

$Z_D = 24.5$ and $x_1 = 5, x_2 = 2$

Solution provided by AtoZmath.com

Any wrong solution, solution improvement, feedback then [Submit Here](#)



Share this solution or page with your friends.

