

## Question 3

The screenshot shows an Excel spreadsheet titled "Bicycle Frames" with the following data:

	Aluminium required in pounds	Teflon required in pounds	Steel required in pounds
Beginner frames to produce	1	2	1
Deluxe frames to produce	2	2	3
Professional frames to produce	4	2	2

Profit calculations:

Frame Type	Profit (\$)	Aluminium (lb)	Teflon (lb)	Steel (lb)
Beginner	35.00	140	40	20
Deluxe	55.00	40	20	20
Professional	75.00	20	20	20

Material requirements (constraints):

Material	Max. Available
Alum Alloy/week	300
Teflon Alloy/week	400
Steel/week	300

The Solver Parameters dialog box is open, showing the following settings:

- Set Objective: \$I\$4
- To: ☒ Max ☐ Min ☐ Value Of: 0
- By Changing Variable Cells: \$F\$5:\$F\$14
- Subject to the Constraints:
  - \$I\$11 <= \$I\$16
  - \$I\$12 <= \$I\$17
  - \$I\$13 <= \$I\$18
- ☒ Make Unconstrained Variables Non-Negative

Bicycle Frames							
Beginner Profit	\$	35.00	Total Profit:	\$	8,600.00		
Beginner frames to produce		140					
Subtotal:	\$	4,900.00					
Deluxe Profit	\$	55.00	Beginner Frames	140	Aluminium required in pounds	Teflon required in pounds	Steel required in pounds
Deluxe frames to produce		40	Deluxe frames	40	1	2	1
Subtotal:	\$	2,200.00	Professional Frames	20	2	2	3
			Total Alum Alloy	300	4	2	2
Professional Profit	\$	75.00	Total Teflon Alloy	400			
Professional frames to produce		20	Total Steel	300			
Subtotal:	\$	1,500.00	Constraints				
				Max. Alum Alloy/week	300		
				Max. Teflon Alloy/week	400		
				Max. Steel/week	300		

Solver Z function:

[illegible]