

Name: _____

Quiz 4.2: Dual problems

1. Setup the dual problem. Write the dual tableau.

Minimize $C = 3x + 2y + 4z$ subject to $5x + 6y + 7z \geq 500$, $8x + 9z \geq 720$, $x, y, z \geq 0$.

2. After pivoting the dual tableau for a few hours, you arrive at the final dual tableau:

u	v	x	y	z	C	RHS
0	1	$1/8$	$-5/48$	0	0	$1/6$
1	0	0	$1/6$	0	0	$1/3$
0	0	$-9/8$	$-11/48$	1	0	$1/6$
0	0	90	$25/3$	0	1	$860/3$

What is the solution to the original minimization problem?

Decision: $x =$ _____, $y =$ _____, $z =$ _____

Surplus: $u = 500 - (5x + 6y + 7z) =$ _____, $v = 720 - (8x + 9z) =$ _____

Cost: $C =$ _____