

| | | | | |
|----------|------|--|--|----------------|
| x_8 | 3.0 | $-2.000000x_2 + 3.000000x_3$ | $-2.000000x_5$ | $-1.000000x_7$ |
| x_9 | 1.0 | $+2.000000x_1 + 1.000000x_2 + 2.000000x_3 + 1.000000x_4$ | $-3.000000x_5 - 2.000000x_6$ | |
| x_{10} | 9.0 | $+1.000000x_2 - 1.000000x_3 + 2.000000x_4$ | $+2.000000x_5 + 3.000000x_6 + 3.000000x_7$ | |
| x_{11} | 9.0 | $+2.000000x_1 + 2.000000x_2 - 3.000000x_3 - 1.000000x_4$ | $-3.000000x_5 - 1.000000x_6 - 3.000000x_7$ | |
| x_{12} | 7.0 | $-2.000000x_1 + 3.000000x_2 + 3.000000x_3 + 3.000000x_4$ | $+1.000000x_5$ | $-3.000000x_7$ |
| x_{13} | 8.0 | $-3.000000x_1 + 2.000000x_2 + 2.000000x_3 + 1.000000x_4$ | $-1.000000x_5 + 2.000000x_6 + 3.000000x_7$ | |
| x_{14} | 13.0 | $-3.000000x_1$ | $-1.000000x_3 + 1.000000x_5$ | $-1.000000x_7$ |
| x_{15} | 6.0 | $+2.000000x_1 - 2.000000x_2 + 2.000000x_3$ | $+2.000000x_6 + 3.000000x_7$ | |
| x_{16} | 6.0 | $-3.000000x_1 + 3.000000x_2$ | $+1.000000x_6 + 3.000000x_7$ | |
| x_{17} | 15.0 | $-1.000000x_2 + 3.000000x_3 + 2.000000x_4$ | $-2.000000x_5 - 1.000000x_6 + 2.000000x_7$ | |
| z | 0.0 | $+2.000000x_1 - 2.000000x_2 - 2.000000x_3 + 2.000000x_4$ | $-1.000000x_5 + 2.000000x_6$ | |

No initialization required – Proceed to Optimize.

| | | | | |
|----------|------|--|--|----------------|
| x_8 | 3.0 | $-2.000000x_2 + 3.000000x_3$ | $-2.000000x_5$ | $-1.000000x_7$ |
| x_9 | 1.0 | $+2.000000x_1 + 1.000000x_2 + 2.000000x_3 + 1.000000x_4$ | $-3.000000x_5 - 2.000000x_6$ | |
| x_{10} | 9.0 | $+1.000000x_2 - 1.000000x_3 + 2.000000x_4$ | $+2.000000x_5 + 3.000000x_6 + 3.000000x_7$ | |
| x_{11} | 9.0 | $+2.000000x_1 + 2.000000x_2 - 3.000000x_3 - 1.000000x_4$ | $-3.000000x_5 - 1.000000x_6 - 3.000000x_7$ | |
| x_{12} | 7.0 | $-2.000000x_1 + 3.000000x_2 + 3.000000x_3 + 3.000000x_4$ | $+1.000000x_5$ | $-3.000000x_7$ |
| x_{13} | 8.0 | $-3.000000x_1 + 2.000000x_2 + 2.000000x_3 + 1.000000x_4$ | $-1.000000x_5 + 2.000000x_6 + 3.000000x_7$ | |
| x_{14} | 13.0 | $-3.000000x_1$ | $-1.000000x_3 + 1.000000x_5$ | $-1.000000x_7$ |
| x_{15} | 6.0 | $+2.000000x_1 - 2.000000x_2 + 2.000000x_3$ | $+2.000000x_6 + 3.000000x_7$ | |
| x_{16} | 6.0 | $-3.000000x_1 + 3.000000x_2$ | $+1.000000x_6 + 3.000000x_7$ | |
| x_{17} | 15.0 | $-1.000000x_2 + 3.000000x_3 + 2.000000x_4$ | $-2.000000x_5 - 1.000000x_6 + 2.000000x_7$ | |
| z | 0.0 | $+2.000000x_1 - 2.000000x_2 - 2.000000x_3 + 2.000000x_4$ | $-1.000000x_5 + 2.000000x_6$ | |

x_1 enters and x_{16} leaves

| | | | | |
|----------|------|---|--|----------------|
| x_8 | 3.0 | $-2.000000x_2 + 3.000000x_3$ | $-2.000000x_5$ | $-1.000000x_7$ |
| x_9 | 5.0 | $-0.666667x_{16} + 3.000000x_2 + 2.000000x_3 + 1.000000x_4$ | $-3.000000x_5 - 1.333333x_6 + 2.000000x_7$ | |
| x_{10} | 9.0 | $+1.000000x_2 - 1.000000x_3 + 2.000000x_4$ | $+2.000000x_5 + 3.000000x_6 + 3.000000x_7$ | |
| x_{11} | 13.0 | $-0.666667x_{16} + 4.000000x_2 - 3.000000x_3 - 1.000000x_4$ | $-3.000000x_5 - 0.333333x_6 - 1.000000x_7$ | |
| x_{12} | 3.0 | $+0.666667x_{16} + 1.000000x_2 + 3.000000x_3 + 3.000000x_4$ | $+1.000000x_5 - 0.666667x_6 - 5.000000x_7$ | |
| x_{13} | 2.0 | $+1.000000x_{16} - 1.000000x_2 + 2.000000x_3 + 1.000000x_4$ | $-1.000000x_5 + 1.000000x_6$ | |
| x_{14} | 7.0 | $+1.000000x_{16} - 3.000000x_2 - 1.000000x_3$ | $+1.000000x_5 - 1.000000x_6 - 4.000000x_7$ | |
| x_{15} | 10.0 | $-0.666667x_{16} + 2.000000x_3$ | $+2.666667x_6 + 5.000000x_7$ | |
| x_1 | 2.0 | $-0.333333x_{16} + 1.000000x_2$ | $+0.333333x_6 + 1.000000x_7$ | |
| x_{17} | 15.0 | $-1.000000x_2 + 3.000000x_3 + 2.000000x_4$ | $-2.000000x_5 - 1.000000x_6 + 2.000000x_7$ | |
| z | 4.0 | $-0.666667x_{16} - 2.000000x_3 + 2.000000x_4$ | $-1.000000x_5 + 2.666667x_6 + 2.000000x_7$ | |

x_4 enters and x_{11} leaves

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|----------|------|-------------------|-----------------|----------------|-------------------|----------------|----------------|----------------|
| x_8 | 3.0 | | $-2.000000x_2$ | $+3.000000x_3$ | | $-2.000000x_5$ | | $-1.000000x_7$ |
| x_9 | 18.0 | $-1.333333x_{16}$ | $+7.000000x_2$ | $-1.000000x_3$ | $-1.000000x_{11}$ | $-6.000000x_5$ | $-1.666667x_6$ | $+1.000000x_7$ |
| x_{10} | 35.0 | $-1.333333x_{16}$ | $+9.000000x_2$ | $-7.000000x_3$ | $-2.000000x_{11}$ | $-4.000000x_5$ | $+2.333333x_6$ | $+1.000000x_7$ |
| x_4 | 13.0 | $-0.666667x_{16}$ | $+4.000000x_2$ | $-3.000000x_3$ | $-1.000000x_{11}$ | $-3.000000x_5$ | $-0.333333x_6$ | $-1.000000x_7$ |
| x_{12} | 42.0 | $-1.333333x_{16}$ | $+13.000000x_2$ | $-6.000000x_3$ | $-3.000000x_{11}$ | $-8.000000x_5$ | $-1.666667x_6$ | $-8.000000x_7$ |
| x_{13} | 15.0 | $+0.333333x_{16}$ | $+3.000000x_2$ | $-1.000000x_3$ | $-1.000000x_{11}$ | $-4.000000x_5$ | $+0.666667x_6$ | $-1.000000x_7$ |
| x_{14} | 7.0 | $+1.000000x_{16}$ | $-3.000000x_2$ | $-1.000000x_3$ | | $+1.000000x_5$ | $-1.000000x_6$ | $-4.000000x_7$ |
| x_{15} | 10.0 | $-0.666667x_{16}$ | | $+2.000000x_3$ | | | $+2.666667x_6$ | $+5.000000x_7$ |
| x_1 | 2.0 | $-0.333333x_{16}$ | $+1.000000x_2$ | | | | $+0.333333x_6$ | $+1.000000x_7$ |
| x_{17} | 41.0 | $-1.333333x_{16}$ | $+7.000000x_2$ | $-3.000000x_3$ | $-2.000000x_{11}$ | $-8.000000x_5$ | $-1.666667x_6$ | |
| z | 30.0 | $-2.000000x_{16}$ | $+8.000000x_2$ | $-8.000000x_3$ | $-2.000000x_{11}$ | $-7.000000x_5$ | $+2.000000x_6$ | |

x_2 enters and x_8 leaves

| | | | | | | | | |
|----------|------|-------------------|----------------|-----------------|-------------------|-----------------|----------------|-----------------|
| x_2 | 1.5 | | $-0.500000x_8$ | $+1.500000x_3$ | | $-1.000000x_5$ | | $-0.500000x_7$ |
| x_9 | 28.5 | $-1.333333x_{16}$ | $-3.500000x_8$ | $+9.500000x_3$ | $-1.000000x_{11}$ | $-13.000000x_5$ | $-1.666667x_6$ | $-2.500000x_7$ |
| x_{10} | 48.5 | $-1.333333x_{16}$ | $-4.500000x_8$ | $+6.500000x_3$ | $-2.000000x_{11}$ | $-13.000000x_5$ | $+2.333333x_6$ | $-3.500000x_7$ |
| x_4 | 19.0 | $-0.666667x_{16}$ | $-2.000000x_8$ | $+3.000000x_3$ | $-1.000000x_{11}$ | $-7.000000x_5$ | $-0.333333x_6$ | $-3.000000x_7$ |
| x_{12} | 61.5 | $-1.333333x_{16}$ | $-6.500000x_8$ | $+13.500000x_3$ | $-3.000000x_{11}$ | $-21.000000x_5$ | $-1.666667x_6$ | $-14.500000x_7$ |
| x_{13} | 19.5 | $+0.333333x_{16}$ | $-1.500000x_8$ | $+3.500000x_3$ | $-1.000000x_{11}$ | $-7.000000x_5$ | $+0.666667x_6$ | $-2.500000x_7$ |
| x_{14} | 2.5 | $+1.000000x_{16}$ | $+1.500000x_8$ | $-5.500000x_3$ | | $+4.000000x_5$ | $-1.000000x_6$ | $-2.500000x_7$ |
| x_{15} | 10.0 | $-0.666667x_{16}$ | | $+2.000000x_3$ | | | $+2.666667x_6$ | $+5.000000x_7$ |
| x_1 | 3.5 | $-0.333333x_{16}$ | $-0.500000x_8$ | $+1.500000x_3$ | | $-1.000000x_5$ | $+0.333333x_6$ | $+0.500000x_7$ |
| x_{17} | 51.5 | $-1.333333x_{16}$ | $-3.500000x_8$ | $+7.500000x_3$ | $-2.000000x_{11}$ | $-15.000000x_5$ | $-1.666667x_6$ | $-3.500000x_7$ |
| z | 42.0 | $-2.000000x_{16}$ | $-4.000000x_8$ | $+4.000000x_3$ | $-2.000000x_{11}$ | $-15.000000x_5$ | $+2.000000x_6$ | $-4.000000x_7$ |

x_3 enters and x_{14} leaves

| | | | | | | | | |
|----------|----------------|-------------------|----------------|-------------------|-------------------|-----------------|----------------|-----------------|
| x_2 | 2.18181818182 | $+0.272727x_{16}$ | $-0.090909x_8$ | $-0.272727x_{14}$ | | $+0.090909x_5$ | $-0.272727x_6$ | $-1.181818x_7$ |
| x_9 | 32.8181818182 | $+0.393939x_{16}$ | $-0.909091x_8$ | $-1.727273x_{14}$ | $-1.000000x_{11}$ | $-6.090909x_5$ | $-3.393939x_6$ | $-6.818182x_7$ |
| x_{10} | 51.4545454545 | $-0.151515x_{16}$ | $-2.727273x_8$ | $-1.181818x_{14}$ | $-2.000000x_{11}$ | $-8.272727x_5$ | $+1.151515x_6$ | $-6.454545x_7$ |
| x_4 | 20.3636363636 | $-0.121212x_{16}$ | $-1.181818x_8$ | $-0.545455x_{14}$ | $-1.000000x_{11}$ | $-4.818182x_5$ | $-0.878788x_6$ | $-4.363636x_7$ |
| x_{12} | 67.6363636364 | $+1.121212x_{16}$ | $-2.818182x_8$ | $-2.454545x_{14}$ | $-3.000000x_{11}$ | $-11.181818x_5$ | $-4.121212x_6$ | $-20.636364x_7$ |
| x_{13} | 21.0909090909 | $+0.969697x_{16}$ | $-0.545455x_8$ | $-0.636364x_{14}$ | $-1.000000x_{11}$ | $-4.454545x_5$ | $+0.030303x_6$ | $-4.090909x_7$ |
| x_3 | 0.454545454545 | $+0.181818x_{16}$ | $+0.272727x_8$ | $-0.181818x_{14}$ | | $+0.727273x_5$ | $-0.181818x_6$ | $-0.454545x_7$ |
| x_{15} | 10.9090909091 | $-0.303030x_{16}$ | $+0.545455x_8$ | $-0.363636x_{14}$ | | $+1.454545x_5$ | $+2.303030x_6$ | $+4.090909x_7$ |
| x_1 | 4.18181818182 | $-0.060606x_{16}$ | $-0.090909x_8$ | $-0.272727x_{14}$ | | $+0.090909x_5$ | $+0.060606x_6$ | $-0.181818x_7$ |
| x_{17} | 54.9090909091 | $+0.030303x_{16}$ | $-1.454545x_8$ | $-1.363636x_{14}$ | $-2.000000x_{11}$ | $-9.545455x_5$ | $-3.030303x_6$ | $-6.909091x_7$ |
| z | 43.8181818182 | $-1.272727x_{16}$ | $-2.909091x_8$ | $-0.727273x_{14}$ | $-2.000000x_{11}$ | $-12.090909x_5$ | $+1.272727x_6$ | $-5.818182x_7$ |

x_6 enters and x_3 leaves

| | | | | | |
|----------|---------------|--|-----------------|-----------------|----------------|
| x_2 | 1.5 | $-0.500000x_8$ | $-1.000000x_5$ | $+1.500000x_3$ | $-0.500000x_7$ |
| x_9 | 24.3333333333 | $-3.000000x_{16} - 6.000000x_8 + 1.666667x_{14} - 1.000000x_{11} - 19.666667x_5 + 18.666667x_3 + 1.666667x_7$ | | | |
| x_{10} | 54.3333333333 | $+1.000000x_{16} - 1.000000x_8 - 2.333333x_{14} - 2.000000x_{11} - 3.666667x_5 - 6.333333x_3 - 9.333333x_7$ | | | |
| x_4 | 18.1666666667 | $-1.000000x_{16} - 2.500000x_8 + 0.333333x_{14} - 1.000000x_{11} - 8.333333x_5 + 4.833333x_3 - 2.166667x_7$ | | | |
| x_{12} | 57.3333333333 | $-3.000000x_{16} - 9.000000x_8 + 1.666667x_{14} - 3.000000x_{11} - 27.666667x_5 + 22.666667x_3 - 10.333333x_7$ | | | |
| x_{13} | 21.1666666667 | $+1.000000x_{16} - 0.500000x_8 - 0.666667x_{14} - 1.000000x_{11} - 4.333333x_5 - 0.166667x_3 - 4.166667x_7$ | | | |
| x_6 | 2.5 | $+1.000000x_{16} + 1.500000x_8 - 1.000000x_{14}$ | $+4.000000x_5$ | $-5.500000x_3$ | $-2.500000x_7$ |
| x_{15} | 16.6666666667 | $+2.000000x_{16} + 4.000000x_8 - 2.666667x_{14}$ | $+10.666667x_5$ | $-12.666667x_3$ | $-1.666667x_7$ |
| x_1 | 4.3333333333 | $-0.000000x_8 - 0.333333x_{14}$ | $+0.333333x_5$ | $-0.333333x_3$ | $-0.333333x_7$ |
| x_{17} | 47.3333333333 | $-3.000000x_{16} - 6.000000x_8 + 1.666667x_{14} - 2.000000x_{11} - 21.666667x_5 + 16.666667x_3 + 0.666667x_7$ | | | |
| z | 47.0 | $-0.000000x_{16} - 1.000000x_8 - 2.000000x_{14} - 2.000000x_{11} - 7.000000x_5 - 7.000000x_3 - 9.000000x_7$ | | | |

x_{-1} enters and Final Dictionary Solution: 47.0 Num Pivots: 5