**Running on kant1.dat for equality constraint**

**LP:**

selected pattern: x(9) = 1.66667 rolls

selected pattern: x(11) = 0.344828 rolls

selected pattern: x(13) = 6.89655 rolls

selected pattern: x(15) = 8.96552 rolls

total waste = 7.24138

total rolls = 17.87

**Rounding:**

selected pattern: x(9) = 2 rolls

selected pattern: x(11) = 1 rolls

selected pattern: x(13) = 7 rolls

selected pattern: x(15) = 9 rolls

total waste = 8

total rolls = 19

**IP:**

selected pattern: x(1) = 1 rolls

selected pattern: x(3) = 1 rolls

selected pattern: x(4) = 3 rolls

selected pattern: x(9) = 1 rolls

selected pattern: x(11) = 3 rolls

selected pattern: x(12) = 3 rolls

selected pattern: x(13) = 1 rolls

selected pattern: x(14) = 9 rolls

total waste = 750

total rolls = 22

**Running on cs1.dat for equality constraint:**

**LP:**

selected pattern: x(9) = 25.6908 rolls

selected pattern: x(10) = 4.45 rolls

selected pattern: x(11) = 8.135 rolls

selected pattern: x(12) = 0.229167 rolls

selected pattern: x(13) = 1.525 rolls

selected pattern: x(14) = 98.75 rolls

selected pattern: x(15) = 152.5 rolls

selected pattern: x(17) = 48.5 rolls

total waste = 0

total rolls = 339.78

**Rounding:**

selected pattern: x(9) = 26 rolls

selected pattern: x(10) = 5 rolls

selected pattern: x(11) = 9 rolls

selected pattern: x(12) = 1 rolls

selected pattern: x(13) = 2 rolls

selected pattern: x(14) = 99 rolls

selected pattern: x(15) = 153 rolls

selected pattern: x(17) = 49 rolls

total waste = 0

total rolls = 344

**IP:**

selected pattern: x(1) = 2 rolls

selected pattern: x(2) = 2 rolls

selected pattern: x(3) = 3 rolls

selected pattern: x(5) = 3 rolls

selected pattern: x(6) = 1 rolls

selected pattern: x(7) = 9 rolls

selected pattern: x(8) = 14 rolls

selected pattern: x(9) = 25 rolls

selected pattern: x(10) = 4 rolls

selected pattern: x(11) = 14 rolls

selected pattern: x(12) = 4 rolls

selected pattern: x(13) = 8 rolls

selected pattern: x(14) = 98 rolls

selected pattern: x(15) = 152 rolls

selected pattern: x(16) = 31 rolls

selected pattern: x(17) = 1 rolls

total waste = 4683

total rolls = 371

**Running on cs2.dat for equality constraint:**

**LP:**

selected pattern: x(10) = 3.6 rolls

selected pattern: x(11) = 4.06273 rolls

selected pattern: x(13) = 9.09091 rolls

selected pattern: x(14) = 9.8 rolls

selected pattern: x(15) = 6.875 rolls

selected pattern: x(16) = 5.375 rolls

selected pattern: x(17) = 1.4547 rolls

selected pattern: x(18) = 7.66667 rolls

total waste = 0

total rolls = 47.93

**Rounding:**

selected pattern: x(10) = 4 rolls

selected pattern: x(11) = 5 rolls

selected pattern: x(13) = 10 rolls

selected pattern: x(14) = 10 rolls

selected pattern: x(15) = 7 rolls

selected pattern: x(16) = 6 rolls

selected pattern: x(17) = 2 rolls

selected pattern: x(18) = 8 rolls

total waste = 0

total rolls = 52

**IP:**

selected pattern: x(1) = 12 rolls

selected pattern: x(2) = 12 rolls

selected pattern: x(3) = 4 rolls

selected pattern: x(4) = 8 rolls

selected pattern: x(5) = 1 rolls

selected pattern: x(6) = 8 rolls

selected pattern: x(7) = 7 rolls

selected pattern: x(8) = 3 rolls

selected pattern: x(9) = 1 rolls

selected pattern: x(10) = 3 rolls

selected pattern: x(11) = 4 rolls

selected pattern: x(13) = 9 rolls

selected pattern: x(14) = 9 rolls

selected pattern: x(15) = 6 rolls

selected pattern: x(16) = 5 rolls

selected pattern: x(18) = 7 rolls

total waste = 4086

total rolls = 99

**Running on cs3.dat for equality constraint:**

**LP:**

selected pattern: x(13) = 4.25 rolls

selected pattern: x(15) = 3.7 rolls

selected pattern: x(16) = 6.5 rolls

selected pattern: x(17) = 0.25 rolls

total waste = 0

total rolls = 14.7

**Rounding:**

selected pattern: x(13) = 5 rolls

selected pattern: x(15) = 4 rolls

selected pattern: x(16) = 7 rolls

selected pattern: x(17) = 1 rolls

total waste = 0

total rolls = 17

**IP:**

selected pattern: x(1) = 3 rolls

selected pattern: x(2) = 1 rolls

selected pattern: x(3) = 1 rolls

selected pattern: x(10) = 2 rolls

selected pattern: x(12) = 2 rolls

selected pattern: x(13) = 1 rolls

selected pattern: x(14) = 1 rolls

selected pattern: x(15) = 4 rolls

selected pattern: x(16) = 3 rolls

selected pattern: x(17) = 1 rolls

total waste = 1075

total rolls = 19