

SIS Results:

Q1 (ii)

$$\{X\} = A B E F + A B G' H' + A' B' C' D' + C D E F + C D G' H'$$

$$\{Y\} = A B + C D$$

sis> print_stats

hw3q1.eqn pi= 8 po= 2 node= 2 latch= 0 lits(sop)= 24 lits(ff)= 16

sis> resub -d

sis> print

$$\{X\} = A' B' C' D' + E F \{Y\} + G' H' \{Y\}$$

$$\{Y\} = A B + C D$$

sis> print_stats

hw3q1.eqn pi= 8 po= 2 node= 2 latch= 0 lits(sop)= 14 lits(ff)= 13

Q2 (iii)

$$\{X\} = A C E + A D' E' + B C E + B D' E' + C' E' + D E$$

sis> print_stats

hw3q2.eqn pi= 6 po= 1 node= 1 latch= 0 lits(sop)= 16 lits(ff)= 10

sis> factor -q X

sis> print_factor

$$\{X\} = (D' E' + C E) (B + A) + C' E' + D E$$

sis> print_stats -f

hw3q2.eqn pi= 6 po= 1 node= 1 latch= 0 lits(sop)= 16 lits(ff)= 10

Q3 (ii)

$$\{X\} = A B C D + A B C' D' + A B E F' + A B E' F + A B G + A B H + A B K + A B L + C D' G + C' D G + G' H' K + G' H' L$$

sis> print_stats

hw3q3.eqn pi=10 po= 1 node= 1 latch= 0 lits(sop)= 40 lits(ff)= 23

sis> fx

sis> print

$$\{X\} = E F' [1] + E' F [1] + G [2] + K [3] + L [3] + [1] [2]' + [1] [4]$$

$$[1] = A B$$

$$[2] = C D' + C' D$$

$$[3] = [1] + [4]'$$

$$[4] = G + H$$

sis> print_stats

hw3q3.eqn pi=10 po= 1 node= 5 latch= 0 lits(sop)= 26 lits(ff)= 22

Q4 (vi)

$$\{F\} = A' C D' + D E$$

$$D = A + B$$

$$E = A C' + B C$$

sis> print_stats

hw3q4.eqn pi= 3 po= 1 node= 3 latch= 0 lits(sop)= 11 lits(ff)= 11

sis> full_simplify

sis> print

$$\{F\} = C D' + E$$

$$D = A + B$$

$$E = A C' + B C$$

sis> print_stats

hw3q4.eqn pi= 3 po= 1 node= 3 latch= 0 lits(sop)= 9 lits(ff)= 9