Since by h) Donald is lazy so

Lazy(Donald) $\equiv \neg\neg$ Lazy(Donald)

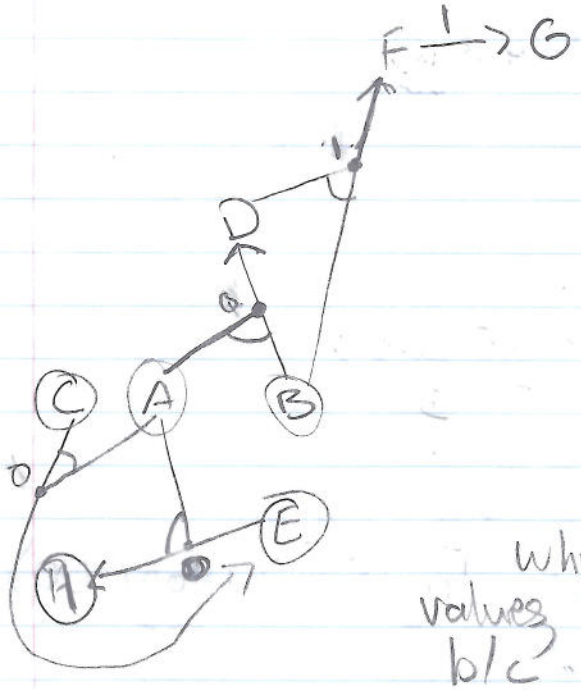
by e) $\neg$Lazy(x) $\wedge$ Workout(x)

Donald does not Workout.

by d) since Donald has high cholesterol and does not work out this implies Donald will live a short Life so

shortlife(Donald) $\equiv$ true

4)



Given A = true

C = true

$A \wedge C \rightarrow E$ $T \wedge T \rightarrow T$

$A \wedge E \rightarrow H$ $T \wedge T \rightarrow T$

If A and C true

E = true

$T \wedge T \rightarrow T$

$A \wedge E \rightarrow H$

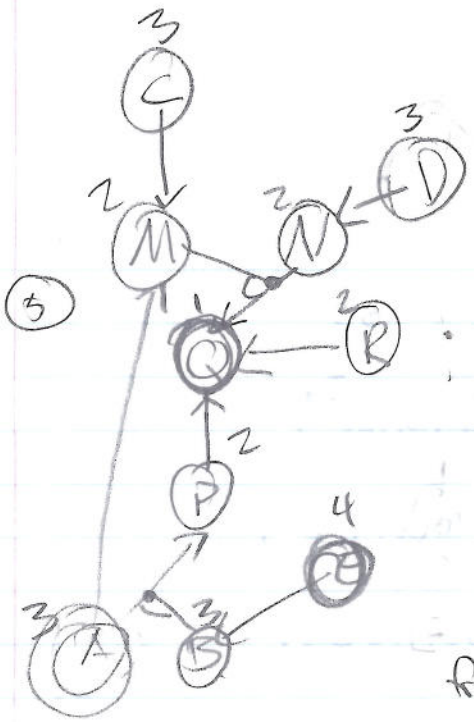
So H is true

While there may be other true values these are the relevant statements b/c

$A \wedge B \rightarrow D$

$B \wedge D \rightarrow F$

$F \rightarrow G$ do not evaluate the truth of H



bode

Q

d) $M \wedge N \rightarrow Q$

f) $A \rightarrow M$ h) $D \rightarrow N$

A and D are given as true from (i), (j) so Q is true

⑥ $\log(63200) = 4.8$

$2.8 + 2 = 4.8$ d)

c) $632 \times 100 = 63200$

e) $\forall x, y \quad x = y \rightarrow \log x = \log y$

e) $\log(632 \times 100) = \log(63200)$

f) $\forall x, y \quad \log(xy) = \log x + \log y$

f) $\log(632 \times 100) = \log(632) + \log(100)$

h) $\forall x, y, z, w \quad \log x = y \wedge \log z = w \rightarrow \log x + \log z = y + w$

$\log(632) = 2.8$ $\log(100) = 2$ $\log(632) + \log(100) = 2.8 + 2$

$\log(63200) = 4.8$