Jason Anderson
852 HW1

P[X > 2.0], lambda = 0.5
= 1 - P[X <= 2.0]
= 1 - (1 - $e^{-0.5(2.0)}$)
= 1 - (1 - 0.36788)
= **0.36788**

P[X <= 5.0], lambda = 0.5
= 1 - $e^{-0.5(5.0)}$
= 1 - 0.08208
= **0.91792**

P[1 < X <= 3], lambda = 0.5
= P[X <= 3] - P[X <= 1]
= (1 - $e^{-0.5(3)}$) - (1 - $e^{-0.5(1)}$)
= (1 - 0.22313) - (1 - 0.60653)
= 0.77687 - 0.39347
= **0.3834**

on avg 2 seconds, off avg 5 seconds
over 1 second timescale, lambda(on) = 2/7
for any given second (x = 1),
P[on] = (2/7)e-(2/7)1
P[on] = 0.21471
If on state = 20Mb/s,
20Mb/s * 0.21471 = **average 4.294Mb/s**