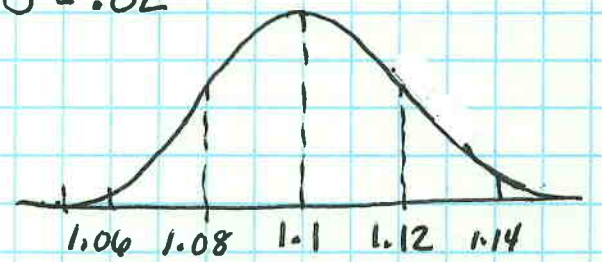
675: GP#1 Water bottles

normal dist, $n=120$, $\mu=1.1$, $\sigma=.02$



a) How many bottles are filled w/ < 1.06 ℓ

2.35% < 1.06ℓ

$120 \cdot .0235 = 2.82 \approx 3$ bottles

b) what percent is between 1.08 & 1.14

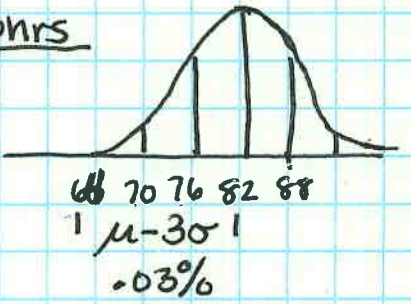
34% + 34% + 13.5% = 81.5% of bottles are between 1.08ℓ and 1.14ℓ.

681: 1, 2, 35, 50

1. Sound levels 30 days $\mu = 82$ dB, $\sigma = 6$dB (normal)

a) normal conversation = 64dB, how many <u>hours</u> was noise this low.

720hrs



0.3% of the hours were that low.

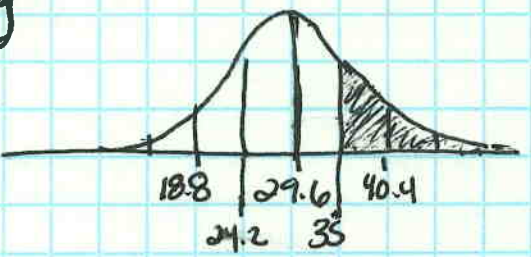
$720 \cdot .003 = 2.16$ hours

b) noise between 76 & 88 dB

34% + 34% = 68%

2. Gas. 290 miles/week average mpg = 29.6
σ = 5.4 mpg

a. number of miles over 35 mpg



μ = 29.6 (50% above)

all above, except 34%

50 − 34% = 16% .16 · 290 = 46.4 miles

36. frequency dist.

hits X	freq.	prob	P(X)	(X · P(X))
0	3	3/17 =	.176	0
1	1	1/17 =	.059	.059
2	8	8/17 =	.479	.958
3	2	2/17 =	.118	.354
4	3	3/17 =	.176	.704
	17			μ = 2.075

b. Players averaged 2 hits in the double header.

c.

X	$(x-\mu)^2$	· P(X)	
0	4.306	· .176	= .758
1	1.156	· .059	= .068
2	0.006	· .479	= .003
3	.856	· .118	= .101
4	3.706	· .176	= .652

$\sum[(x-\mu)^2 \cdot P(X)] = 1.582 = \sigma^2$

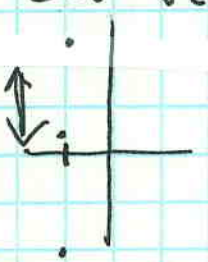
$1.258 = \sigma$

50. V(−3, 11), (−3, −9) foci (−3, 7), (−3, −5) $c^2 = a^2 - b^2$

(h, k) = (−3, 1) c = 6 $b^2 = a^2 - c^2$

a = 10 $b^2 = 100 - 36 = 64$

$b = 8$



$$\frac{(x+3)^2}{8^2} + \frac{(y-1)^2}{10^2} = 1$$