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Example 10: A Bombing Mission, page 68, Chapter 02
Consider a bomber attempting to destroy an ammunication depot. (This bomber has conventional rather than laser-guided weapons). If a bomb falls anywhere inside the target, a hit is scored; otherwise, the bomb is a miss. (Note that when a bomb appears appears visually to have touched a boundary line, it may or may not have hit the target; the model determines mathematically whether a hit has occurred, using the (X,Y) coordinates nd the equations of the piecewise-linear boundary of the depot.)
The bomber flies in the horizontal direction and carries 10 bombs. The aiming point is (0,0). The actual point of impact is assumed to be normally distributed around the aiming point with a standard deviation of 400 meters in the direction of flight and 200 meters in the perpendicular direction. The problem is to simulate the operation and estimate the number of bombs on target.
Recall that the standardized normal variate Z, having mean $\mu = 0$, and standard deviation $\sigma = 1$, is distributed as

$$Z = \frac{X - \mu}{\sigma}$$

Where X is a normal random variable, Then, with mean zero and standard deviations given by $\sigma_X = 400 \; and \; \sigma_Y = 200$, we have

$$Z_X = \frac{X}{400}, Z_Y = \frac{Y}{200}$$

Where (X,Y) are the simulated coordinates where the bomb hits.

σ_X = 400

σ_Y = 200

X range: $X_{low} \leq X \leq X_{high}$,
Y range: $Y_{low} \leq Y \leq Y_{high}$,

Z_X and Z_Y
Random Normal Number,

X_{low} = -1300

X_{high} = 1300

Y_{low} = -200

Y_{high} = 200

Bomb	Z_X	σ_X	X	Z_Y	σ_Y	Y	Hit Or Miss?	Number of Hits	Number of Miss
1	0.23	400	92	0.49	200	98	Hit	14	6
2	0.39	400	156	-0.13	200	-26	Hit		
3	-0.17	400	-68	0.71	200	142	Hit		
4	0.64	400	256	-0.9	200	-180	Hit		
5	-1.9	400	-760	-2.13	200	-426	Miss		
6	0.68	400	272	0.5	200	100	Hit		
7	-0.44	400	-176	1.44	200	288	Miss		
8	1.41	400	564	0.06	200	12	Hit		
9	1.21	400	484	0.84	200	168	Hit		
10	0.07	400	28	0.04	200	8	Hit		
11	0.53	401	213	0.77	201	154.77	Hit		
12	-1.19	402	-478	1.92	202	387.84	Miss		
13	0.11	403	44	-0.78	203	-158.34	Hit		
14	0.16	404	65	1.19	204	242.76	Miss		
15	-0.82	405	-332	0.17	205	34.85	Hit		
16	-1.5	406	-609	0.32	206	65.92	Hit		
17	0.19	407	77	-1.4	207	-289.8	Miss		
18	0.49	408	200	1.51	208	314.08	Miss		