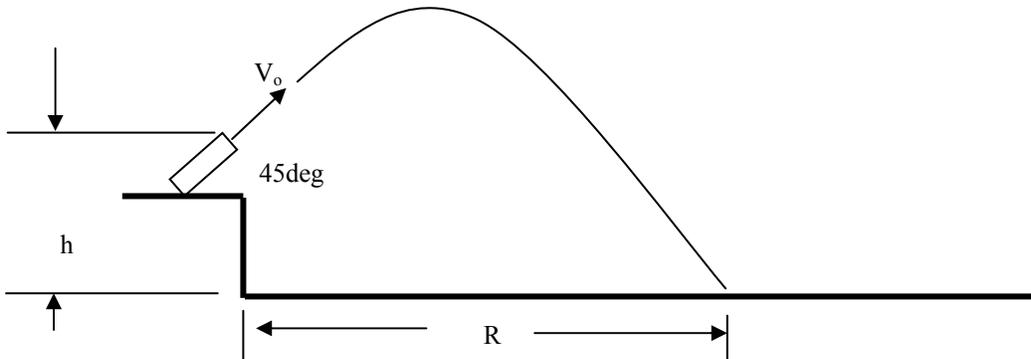


Quiz #4

S/N Ratios & Additivity

- 1) (25%) An increase in 6dB in the nominal-the-best S/N ratio *always* indicates
 - a) A reduction by about 50% in the standard deviation of the response.
 - b) A reduction by about 50% in the variance of the response.
 - c) An increase by about 400% in the mean of the response.
 - d) An approximate four fold increase in the ratio of mean squared and variance.

- 2) (25%) A negative nominal the best S/N ratio indicates
 - a) That the mean response is negative.
 - b) That the standard deviation of the response is greater than the mean of the response.
 - c) A very high degree of robustness.
 - d) That some error was made in recording of the experimental data or the subsequent calculations.



- 3) (50%) If the response of the system is defined to be R , will the system above be additive with respect to the factor effects of h and V ? What if the system response is defined as $\log(R)$?

Note: Neglect air resistance and assume acceleration due to gravity (g) is known and constant.