ANALYTICAL SOLUTION

p_i : probability that a student in category i attends any given lecture
N_i : true number of students in category i
O_i : observed number of students in category i who filled in the TEQ

Because students attend independently, the expected number of observed TEQ responses from category i is

$$E[O_i] = N_i p_i$$

Rearranging gives $N_i = \frac{E[O_i]}{p_i}$

True distribution: $N \approx \frac{O_i}{p_i}$ ← correction for attendance bias

Observed TEQ

Attendence	p_i	Observed O_i	$\tilde{N}_i = O_i/p_i$
25%	0.25	7	28
50%	0.50	19	38
75%	0.75	42	56
100%	1.00	29	29

$\sum \tilde{N}_i = 151$

$$150 \times \frac{\tilde{N}_i}{\sum N_i}$$

Total number in class is 150 so rescale

Attendance	Estimated True Number
25%	28
50%	38
75%	56
100%	28