Answer on Question #75826 – Math – Statistics and Probability

Question

Editors of the business report in Exercise 38 are willing to accept a margin of error of 4% but want 99% confidence. How many randomly selected employers will they need to contact?

Solution

Choose sample size for a given margin of error and confidence interval

$$ME = z_{\alpha/2}\sqrt{\frac{pq}{n}}$$

Solve the equation for n

$$n = \frac{\left(z_{\alpha/2}\right)^2 pq}{(ME)^2}$$

Confidence level	α	$\alpha/2$	$z_{\alpha/2}$
99%	1%	0.5%	2.576

$p = 0.5$ (because not mentioned anywhere)
$q = 1 - p = 0.5$
$ME = 4\%$

$$n = \frac{(2.576)^2(0.5)(0.5)}{(0.04)^2} \approx 1037$$

Answer: 1037 employers.