Question: Actual lengths of pregnancy terms are normally about a mean pregnancy length of about 38 to 39 weeks with a standard deviation of 15 days. About what percentage of births would be expected within 1 month of the mean pregnancy length?

Answer: Denote random variable describing the length of pregnancy term by X. M is the mean value of X(M is about 38 to 39 weeks). $\sigma_X = 15$ (days).

By the Chebyshev's inequality, $P(|X - M| \geq a) \leq \frac{\sigma_X^2}{a^2}$. And $P(|X - M| < a) > 1 - \frac{\sigma_X^2}{a^2}$.

Therefore, the probability of birth being within 30 days of the mean pregnancy length is

$$P(|X - M| < 30) > 1 - \frac{15^2}{30^2} = 1 - \frac{1}{4} = \frac{3}{4} = 0.75$$

Answer: 0.75.