1. **10 points** Let $X$ be normal with mean 10 and variance 25. Using the table on the back, compute $P\{X \leq 22\}$.

   How should one use the table on back? As an illustration, if $Y$ is a standard normal random variable, then

   $$P\{Y \leq .92\} = .8212 \quad \text{and} \quad P\{Y \leq 2.96\} = .9985.$$
Answers

1. We have that $X = 5\bar{X} + 10$, where $\bar{X}$ is a standard normal random variable.

$$\mathbb{P}\{X \leq 22\} = \mathbb{P}\{5\bar{X} + 10 \leq 22\} = \mathbb{P}\{\bar{X} \leq 2.4\} = .9918.$$