Practice worksheet | Counting and introductory statistics

Estimating proportions in normal models with appropriate technology

Name: _____ Date: _____

6 questions | 13 marks

1. For normal mean 60 and sd 4, find the z-score of 66. [2 marks]

2. Using $\Phi(1.25) = 0.89435$, find $P(Z > 1.25)$. [2 marks]

3. Using $\Phi(0.5) = 0.69146$ and $\Phi(-1) = 0.15866$, find $P(-1 < Z < 0.5)$. [2 marks]

4. For normal mean 120 and sd 10, estimate $P(X < 105)$ using a normal-CDF tool. [2 marks]

5. The inverse standard-normal value for cumulative area 0.90 is 1.28155. Find the 90th percentile of normal mean 80 and sd 6. [2 marks]

6. A normal model predicts a failure probability 0.023 for a batch of 400. Interpret the expected number and explain why it is not a promise. [3 marks]