COP2073C Practice Exercise 7

A tutor knows that the length of time taken to complete a certain statistics question by first-year undergraduate students, X, is normally distributed with a mean of 17 minutes and a standard deviation of 4.5 minutes.

Write an R script which calculates the following:

- What is the probability a randomly selected undergraduate takes more than 20 minutes to complete the question?
  - Hint: Use **1 - pnorm(time, mean = mean_value, sd = sd_value)** to find the probability for more than a given time.
- What's the chance that a student takes between 5 and 10 minutes to finish the question?
  - Hint: Use **pnorm(upper_time, mean = mean_value, sd = sd_value) - pnorm(lower_time, mean = mean_value, sd = sd_value)** for the probability between two times.
- Find the time that marks off the slowest 10 percent of students (the time threshold below which the slowest 10% of students fall).
  - Hint: Use **qnorm(quantile, mean = mean_value, sd = sd_value)** to find the time for a given percentile.

Non-Functional Requirements:

- Include a 4-line ID header at the beginning of your script.
- Include vertical spacing (a blank line) between logical blocks for readability.
- Comment your code thoughtfully (avoid excessive commenting).
- Ensure each line of code does not exceed 80 columns.

Expected Output:

```
1. Probability of more than 20 minutes: 0.2524925
2. Probability of between 5 and 10 minutes: 0.05607653
3. Time for slowest 10%: 11.23302 minutes
```