Activity #11b: Normal Probabilities Practice

According to the Opinion Research Corporation, the time men spend in the shower is normally distributed with a mean of 11.4 minutes and a standard deviation of 1.8 minutes.

Let X = the time men spend in the shower

1. Calculate the probability that a randomly chosen man spends less then 10 minutes in the shower.

   $P(X < 10) = P(X \leq 10) =$ _____

2. $P(X > 14) = 1 - P(X \leq 14) =$ _____

3. $P(9 < X < 12) =$ _____

4. $P(X > 30) =$ _____

5. $P(11 < X < 12) =$ _____

6. Calculate the probability that a man showers exactly 10 minutes: $P(X = 10) =$ _____

7. Calculate the 95^{th} percentile

8. 5% of men shower less than _____ minutes

9. Calculate the 97.5^{th} percentile

Answers (your answers may vary slightly due to rounding):
1. 0.21835
2. 0.07431
3. 0.53935
4. virtually zero
5. 0.21849
6. zero
7. 14.36074 minutes
8. 8.439264 minutes
9. 14.92795 minutes