Name:

Elementary Statistics **HW 6.3 part 1**

1. What is the difference between a standard normal distribution and a non-standard normal distribution?

Use the following information to answer questions 2-12: The Wechsler Adult Intelligence Scale is an IQ score obtained through a test, and the scores are normally distributed with a mean of 100 and a standard deviation of 15. Also, remember that $z = \frac{x-\mu}{\sigma}$

2. Draw a bell-shaped graph to represent this distribution.

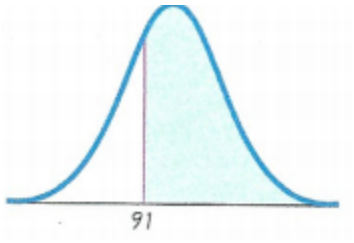
3. For the bell-shaped graph, what is the area under the curve?

4. What is the value of the median?

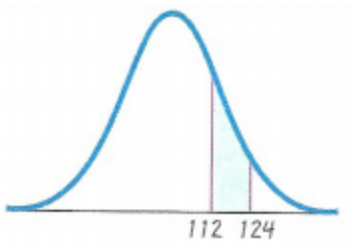
5. What is the value of the mode?

6. What is the value of the variance?

7. Given the following sketch of the normal distribution, first find z and then find the area of the shaded region using table A-2.



8. Given the following sketch of the normal distribution, first find the two z scores and then find the area of the shaded region using table A-2.



For questions 9-12, be sure to sketch and label the bell curve first. Then find the z-score(s) and the area of the shaded region from the question.

9. Find the probability that a randomly-selected adult has an IQ less than 85.

10. Find the probability that a randomly-selected adult has an IQ greater than 70.

11. Find the probability that a randomly-selected adult has an IQ between 90 and 100 (referred to as the “normal” range)

12. Find the probability that a randomly-selected adult has an IQ between 110 and 120 (referred to as “bright normal”)