

Name

sect. 1 2 15

Homework for z-scores and probability (ststswk8-1)

Draw a normal curve and insert the z-scores along the bottom line. Insert the percentages under the curve, and then insert the percentile ranks in another line under the z-score line. Finally, insert a line for IQ scores that correspond to each z-score. SHOW YOUR WORK FOR FULL 10 PT CREDIT.

- 1. Choosing a person at random, what is the probability that he'll score
 - a. between $z = -1.00$ and $+1.00$?
 - b. between $z = 0$ and $z = -1.00$?
 - c. between $z = -2.00$ and $+2.00$?
 - d. between $z = 0$ and $z = +2.00$?

+	<u>.6800</u>
	<u>.3400</u>
	<u>.9600</u>
	<u>.4800</u>

- 2. What is the probability that his IQ will fall
 - a. above $z = +2.00$ OR below $z = -2.00$?
 - b. above $z = +1.00$?
 - a. between 70 and 130 ?
 - b. between 85 and 115 ?
 - c. over 130 ?
 - d. under 85 ?

+	<u>.0400</u>
	<u>.1600</u>
	<u>.9600</u>
	<u>.6800</u>
	<u>.0200</u>
	<u>.1400</u>

- 3. (MC) What is the percentile associated with the IQ score of 115? choose one
 - a. 34
 - b. 84
 - c. 68
 - d. 16

- 4. What is the IQ that is at the 2nd percentile?
- 5. What is the IQ that is at the 96th percentile?
- 6. What is the IQ score that is at the median, or the 50th percentile?

+	<u>70</u>
	<u>126</u>
	<u>100</u>

Use the z table for the following questions: SHOW ALL YOUR WORK, including the normal curve, z formulas, etc. Put your answers HERE on this page. Attach the drawings and figuring.

- 8. What is the probability that any person's IQ will be
 - a. between $z = 0$ and $z = +1.56$?
 - b. between $z = -1.56$ and $z = +1.56$?

+	<u>.4406</u>
	<u>.8812</u>

- 9. What percentage of the population scores an IQ over 145?
- 10. What percentage of the population scores an IQ over 135?
- 11. What percentage of the population scores an IQ under 75 ?
- 12. The top 10% of the population scores over what IQ score ?

+	<u>13%</u>
	<u>99%</u>
	<u>5%</u>
	<u>119</u>

- 13. The bottom 1/3 of the population scores under what IQ score ?
- 14. The bottom 2 1/2 percent of the population scores under what IQ score ?
- 15. The top 1/2 percent of the population scores over what IQ score ?

+	<u>114</u>
	<u>11</u>
	<u>139</u>

- 16. What is the percentile for an IQ of 90?
- 17. What is the percentile for an IQ of 120?
- 18. What is the IQ score at the 25th percentile?

+	<u>25th</u>
	<u>91st</u>
	<u>90</u>