AP Statistics
Unit 03 – Designing Experiments
Homework #5

Name______________________________
Period_______

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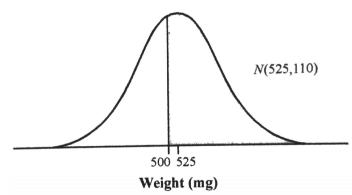
87. **C**
88. **B**
89. **B**
90. **D**
91. **C**
92. **D**
93. **B**
94. **B**
95. **a)** For these seeds, the weights follow a N(525, 110) distribution and we want the proportion of seeds that weigh more than 500 mg.

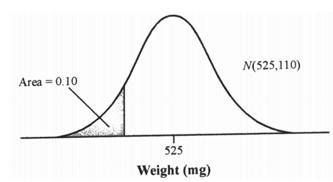
$z = \frac{500-525}{110} = -0.23$



From Table A, the proportion of z-scores greater than -0.23 is 0.5910.
Using technology, normalcdf(-0.23,10000) = 0.5899. About 59% of seeds will weigh more than 500 mg.

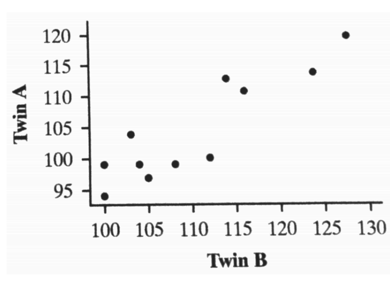
b) For these seeds, the weights follow a N(525,110) distribution and we are looking for the boundary value x that has an area of 0.10 to the left. A z-score of -1.28 gives the closest value to 0.1003.

Solving $-1.28 = \frac{x-525}{110}$ gives x = 384.2.



The smallest weight among the remaining seeds should be about 384 mg.

96. **a)** Fairly well, because there is a moderately weak (due to lack of many data points, otherwise it would be strong) linear relationship between the IQ's of the twins with a correlation of r = 0.91.



b) Here is a dotplot of the difference in IQ (Twin B – Twin A). Because all but one of the differences are positive, Twin B (the one living in the higher-income homes) tends to have a higher IQ than Twin A.