Math 373 Hw 8 Name _____ Score _____/ 16

Office: 956-4672, Home 536-1285. Hw 217: 6.2, 6.4, 6.6, 6.10, 6.12, 6.14, 6.16. Rec 217: 6.3ab, 6.5a, 6.11ab, 6.13.

Page 217. *Round to two significant decimal places. Check at right.*

6.2. Find the area under the normal curve between the given values of the standardized normal variable z.

(a) $z = -1.4$ and $z = 1.4$ area = . _ _ 12

(b) $z = -2$ and $z = 2$ area = . _ _ 14

6.4. Find the probabilities.

(a) $P(z < 2.33)$ = . _ _ 18

(c) $P(z > 1.96)$ = . _ _ _ 7

DEFINITION. z_α = the number such that $P(z > z_\alpha) = \alpha$. Thus the probability of exceeding z_α is α.

6.6′. Find $z_{.9750}$ and $z_{.3594}$.

(a) $P(z > z_{.9750}) = .9750$ $z_{.9750}$ = _ _ . _ _ 16

(b) $P(z > z_{.3594}) = .3594$ $z_{.3594}$ = . _ _ 9

6.9′. Find the following percentiles for the standardized normal random variable z.

(a) 80th z = . _ _ 12

(b) 85th z = _ . _ _ 5

6.10ab A normal random variable x has mean $\mu = 10$ and std. dev. $\sigma = 2$. Find the probabilities of these x-values:

(a) $x > 13.5$

= . _ _ 4

(b) $x > 11.8$

= . _ _ 10

6.14′(2) A normal random variable x has mean 50 and std. dev. 10. Find a value of x that has area .01 to its right.

= _ _ . _ 13

6.15(4). Suppose x is a normal random variable such that $P(x > 4) = .9772$ and $P(x > 5) = .9332$. Find the mean and std. dev. Warning, if x is below the mean, the z-score is negative.

Give the two simultaneous linear equations for μ and σ:

Solve the equations.

You should get -- $\mu = 8$ $\sigma = 2$