

**Math 170E**  
**Homework for Section 3.3\***  
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- Section 3.3: Question 3, 9, 11.

Question 1 from 9-th ed: If  $Z$  is  $N(0, 1)$ , find

- (a)  $P(0.53 < Z \leq 2.13)$ .
- (b)  $P(-0.79 \leq Z < 1.52)$ .
- (c)  $P(Z > -1.77)$ .
- (d)  $P(Z > 2.89)$ .
- (e)  $P(|Z| < 1.96)$ .
- (f)  $P(|Z| < 1)$ .
- (g)  $P(|Z| < 2)$ .
- (h)  $P(|Z| < 3)$ .

Question 5 from 9-th ed: If  $Z$  is  $N(6, 25)$ , find

- (a)  $P(6 \leq X \leq 12)$ .
- (b)  $P(0 \leq X \leq 8)$ .
- (c)  $P(-2 < X \leq 0)$ .
- (d)  $P(X > 21)$ .
- (e)  $P(|X - 6| < 5)$ .
- (f)  $P(|X - 6| < 10)$ .
- (g)  $P(|X - 6| < 15)$ .
- (h)  $P(|X - 6| < 12.41)$ .

Question 7 from 9-th ed: If  $X$  is  $N(650, 625)$ , find

- (a)  $P(600 \leq X < 660)$ .
- (b) A constant  $c > 0$  such that  $P(|X - 650| \leq c) = 0.9544$ .

Question 13 from 9-th ed: The serum zinc level  $X$  in micrograms per deciliter for males between ages 15 and 17 has a distribution that is approximately normal with  $\mu = 90$  and  $\sigma = 15$ . Compute  $P(X > 120 | X > 105)$ .

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