

Math 1313
Homework 27
Section 7.5/7.6

Find the value of the probability of the standard normal variable Z corresponding to this area for problems 1-3.

1. $P(Z < 1.62)$.
 - a. 0.8962
 - b. 0.9959
 - c. 0.1317
 - d. 0.9474
 - e. 0.9234

2. $P(Z > -1.57)$
 - a. 0.0582
 - b. 0.2439
 - c. 0.9418
 - d. 0.3578
 - e. 0.1032

3. $P(-1.41 < Z < 0.63)$
 - a. 0.6564
 - b. 0.5613
 - c. 0.8714
 - d. 0.6406
 - e. 0.0793

Let Z be the standard normal variable. Find the values of z if z satisfies the following problems.

4. $P(Z < z) = 0.8078$
 - a. -0.57
 - b. 0.98
 - c. 0.37
 - d. 1.44
 - e. 0.87

5. $P(Z > z) = 0.5832$
 - a. -0.42
 - b. 0.43
 - c. -0.21
 - d. 0.78
 - e. -0.07

6. $P(-z < Z < z) = 0.1896$
 - a. 1.81
 - b. 0.24
 - c. 1.04
 - d. 1.44
 - e. 0.32

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7. The medical records of infants delivered at the Kaiser Memorial Hospital show that the infants' lengths at birth (in inches) are normally distributed with a mean of 21 and a standard deviation of 2.6. Find the probability that an infant selected at random from among those delivered at the hospital measures is more than 23 inches.

- a. 0.7692
- b. 0.1991
- c. 0.9458
- d. 0.2206
- e. 0.6579

For problems 8- 10, use the appropriate normal distribution to approximate the resulting binomial distributions.

8. A coin is weighted so that the probability of obtaining a head in a single toss is 0.3. If the coin is tossed 35 times, what is the probability of obtaining between 9 and 14 heads, exclusive.

- a. 0.510
- b. 0.627
- c. 0.701
- d. 0.287
- e. 0.824

9. If 14% of men are bald, what is the probability that more than 100 in a random sample of 850 men are bald?

- a. 0.9778
- b. 0.9664
- c. 0.0697
- d. 0.0027
- e. 0.0378

10. The Colorado Mining and Mineral Company has 1000 employees engaged in its mining operations. It has been estimated that the probability of a worker meeting with an accident during a 1-yr period is 0.08. What is the probability that more than 70 workers will meet with an accident during the 1-yr period?

- a. 0.8665
- b. 0.9089
- c. 0.3585
- d. 0.3827
- e. 0.6548