Homework #6
Due Tuesday Sept 27, 2011
Econ 29000
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For this exercise your study group may hand in a single assignment. When submitting assignments, **please include your name and the assignment number as part of the filename**. Please write the names of your study group members at the beginning of your homework. These assignments may be made public and available to all members of the class.

We'll begin this assignment in class.

Sample Problems:

- For a Standard Normal distribution (you are encouraged to sketch the PDF in each case),
    a. what is the area to the left of -1.5?
    b. what is the area to the right of 0.2?
    c. what is the area to the right of -1.6?
    d. what is the area to the left of -2.2?
    e. what is the area in both tails farther than 1.7?
    f. what is the area in both tails farther than -1.4?
    g. what distance from the mean (in absolute value) leaves 0.17 in both tails?
    h. what distance from the mean (in absolute value) leaves 0.29 in both tails?
- For a Normal distribution(you are encouraged to sketch the PDF in each case),
    a. with mean 12 and standard deviation of 4, what is the area to the left of 20.4?
    b. with mean 7 and standard deviation of 4, what is the area to the right of -0.2?
    c. with mean -12 and standard deviation of 5, what is the area in both tails farther from the mean (in absolute value) than -3.5?
    d. with mean 13 and standard deviation of 2, what is the area in both tails farther from the mean (in absolute value) than 11.6?
    e. with mean -13 and standard deviation of 9 what values leave 0.09 in both tails?
    f. with mean -12 and standard deviation of 9 what values leave 0.97 in both tails?
- You are in charge of polling for a political campaign. You have commissioned a poll of 300 likely voters. Since voters are divided into three distinct geographical groups (A, B and C), the poll is subdivided into three groups with 100 people each. The poll results are as follows:

	total	A	B	C
number in favor of candidate	180	48	57	75
number total	300	100	100	100

What fraction of voters, overall and in each district, favor the candidate? What is the standard error of each? If each poll result has a normal distribution, what is the area of probability to the left of 50%?

Homework Problems

1. For a Normal Distribution with mean 9 and standard deviation 9.1, what is area to the right of -8.3?
   A. 0.8387 B. 0.9713 C. 0.1587 D. 0.0287
2. For a Normal Distribution with mean 1 and standard deviation 9.6, what is area to the right of 23.1?
   A. 0.1251 B. 0.0107 C. 0.4585 D. 0.9893
3. For a Normal Distribution with mean 12 and standard deviation 7.9, what is area to the right of 30.2?
   A. 0.1587 B. 0.9893 C. 0.9356 D. 0.0107
4. For a Normal Distribution with mean 5 and standard deviation 7.6, what is area to the left of 14.1?
   A. 0.2743 B. 0.1587 C. 0.8849 D. 0.2301
5. For a Normal Distribution with mean -14 and standard deviation 2.8, what is area to the left of -20.4?
   A. 0.0107 B. 0.8235 C. 0.0214 D. 0.0971
6. For a Normal Distribution with mean -2 and standard deviation 3.8, what is area to the left of 2.9?
   A. 0.7007 B. 0.9032 C. 0.1936 D. 0.2578
7. For a Normal Distribution with mean 4 and standard deviation 7.1, what is area in both tails farther from the mean than 13.2?
   A. 0.1936 B. 0.3872 C. 0.2866 D. 0.1587
8. For a Normal Distribution with mean -11 and standard deviation 5.0, what is area in both tails farther from the mean than 0.5?
   A. 0.1251 B. 0.1587 C. 0.0429 D. 0.0214
9. For a Normal Distribution with mean -7 and standard deviation 5.1, what is area in both tails farther from the mean than -1.9?
   A. 0.3173 B. 0.0849 C. 0.6346 D. 0.9151
10. For a Normal Distribution with mean 13 and standard deviation 3.5, what is area closer to the mean than 7.8?
    A. 0.2672 B. 0.8664 C. 0.1587 D. 0.7734
11. For a Normal Distribution with mean 10 and standard deviation 5.9, what is area closer to the mean than 11.2?
    A. 0.9550 B. 0.3170 C. 0.0450 D. 0.1585
12. For a Normal Distribution with mean -4 and standard deviation 5.7, what is area closer to the mean than -16.0?
    A. 0.0357 B. 0.1587 C. 0.7586 D. 0.9643
13. For a Normal Distribution with mean -11 and standard deviation 5.7, what value leaves probability 0.469 in the left tail?
    A. -11.4434 B. -11.2217 C. -2.2323 D. 0.5310
14. For a Normal Distribution with mean 3 and standard deviation 2.6, what value leaves probability 0.654 in the left tail?
    A. 4.0300 B. 0.3961 C. NaN D. 1.5500

15. For a Normal Distribution with mean 10 and standard deviation 5.4, what value leaves probability 0.995 in the left tail?
    A. 4.4277 B. 2.5758 C. 16.9547 D. 23.9095
16. For a Normal Distribution with mean 11 and standard deviation 0.8, what value leaves probability 0.400 in the right tail?
    A. 11.6733 B. 10.8987 C. 10.7973 D. 11.2027
17. For a Normal Distribution with mean -10 and standard deviation 2.6, what value leaves probability 0.146 in the right tail?
    A. 1.0537 B. -4.8999 C. -7.2603 D. 0.8540
18. For a Normal Distribution with mean -11 and standard deviation 8.5, what value leaves probability 0.622 in the right tail?
    A. -0.9834 B. -8.3587 C. -0.3107 D. -13.6413
19. For a Normal Distribution with mean -3 and standard deviation 2.4, what values leaves probability 0.404 in both tails?
20. For a Normal Distribution with mean -4 and standard deviation 8.2, what values leaves probability 0.016 in both tails?
21. For a Normal Distribution with mean 4 and standard deviation 4.5, what values leaves probability 0.547 in both tails?