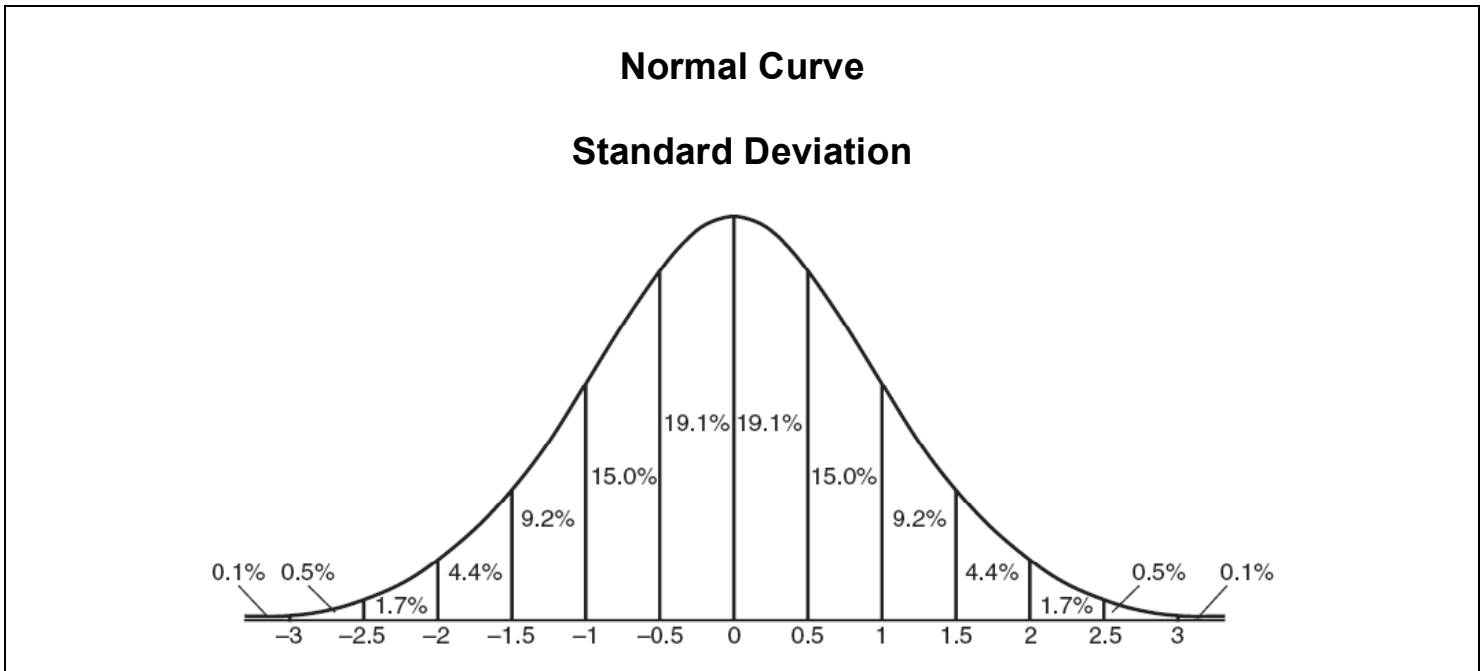


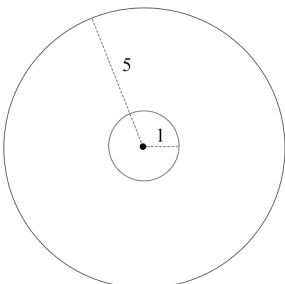
M\$6 Exam 6 Review Sheet

Exam 6 will be given on **Wednesday, June 10, 2009** and will focus on the following topics: circles and angle measurement (measures of arcs/angles, chord/tangent/secant relationships), binomial probability involving “at least” or “at most,” the binomial theorem, finding a specific term in a binomial expansion, summation notation, mean, median, mode, standard deviation (population and sample), the normal curve, and percentile. The normal curve shown below will be provided for your reference on this exam.

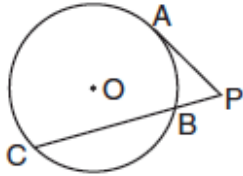
Graphing calculators are required on this exam.



- Find the value of each summation: a) $\sum_{n=1}^4 (2n - 3)^2$ b) $\sum_{k=0}^3 \left(\sin \frac{k\pi}{2} \right)$
- In a baseball game, the probability that Peter gets on base safely is $\frac{3}{7}$. If he comes to bat four times, what the probability that he will get on base safely *at most* twice?
- As shown in the accompanying diagram, a circular target with a radius of 5 cm has a bull's-eye that has a radius of 1 cm. If three arrows randomly hit the target, what is the probability that *at least* two hit the bull's-eye?



4. From 1984 to 1995, the winning scores for a golf tournament were 276, 279, 279, 277, 278, 278, 280, 282, 285, 272, 279, and 278. Using the standard deviation for the sample, S_x , find the percent of these winning scores that fall within one standard deviation of the mean.
5. In the accompanying diagram, tangent \overline{PA} and secant \overline{PBC} are drawn to circle O from external point P . If $PA = 8$ and $PB = 4$, find the length of \overline{BC} .



6. A company has 500 employees. 200 of these employees earn \$10 per hour, 150 earn \$12 per hour, and 150 earn \$20 per hour. Which of the following is greater than \$12?
- (1) The mean salary per hour (3) The mode salary per hour
 (2) The median salary per hour (4) None of the above
7. On a standardized test, the distribution of scores is normal, the mean of the scores is 75, and the standard deviation is 5.8. If a student scored 83, the student's score ranks
- (1) below the 75th percentile
 (2) between the 75th percentile and the 84th percentile
 (3) between the 84th percentile and the 97th percentile
 (4) above the 97th percentile
8. The table below shows the heights in inches of ten girls on a basketball team.

| Height | Frequency |
|--------|-----------|
| 62 | 2 |
| 66 | 1 |
| 68 | 2 |
| 72 | 3 |
| 74 | 2 |

Find the mean and the standard deviation of these heights to the *nearest thousandth*. How many of the individual girls' heights fall within one standard deviation of the mean?

9. a) Find the third term in the expansion of $(a - \sqrt{2})^5$.
 b) Find the middle term in the expansion of $(3x - y)^6$.
10. Given circle O with diameter \overline{GOAL} ; secants \overline{HUG} and \overline{HTAM} intersect at point H ; $m\widehat{GM} : m\widehat{ML} : m\widehat{LT} = 7 : 3 : 2$; and chord $\overline{GU} \cong \text{chord } \overline{UT}$. Find the ratio of $m\angle UGL$ to $m\angle H$.

