2nd Vars: normal cdf
lower
upper
μ = mean
σ = standard deviation

Name **Schlansky**
Mr. Schlansky

Date _____
Algebra II

Normal Distribution Without the Curve

normal cdf

1. The weights of bags of Graseck's Chocolate Candies are normally distributed with a mean of 4.3 ounces and a standard deviation of 0.05 ounces. What is the probability that a bag of these chocolate candies weighs less than 4.27 ounces?

1) 0.2257
2) 0.2743
3) 0.7257
4) 0.7757

lower = -999999
upper = 4.27
μ = 4.3
σ = .05
.2743

normal cdf

2. The weight of a bag of pears at the local market averages 8 pounds with a standard deviation of 0.5 pound. The weights of all the bags of pears at the market closely follow a normal distribution. Determine what percentage of bags, to the *nearest integer*, weighed *more* than 8.25 pounds.

lower = 8.25
upper = 99999999
μ = 8
σ = 0.5
.308 (100) = 31%

normal cdf

3. The scores of a recent test taken by 1200 students had an approximately normal distribution with a mean of 225 and a standard deviation of 18. Determine the number of students who scored between 200 and 245.

.9929 (1200)
1191

lower = 200
upper = 245
μ = 225
σ = 18

normal cdf

4. The heights of women in the United States are normally distributed with a mean of 64 inches and a standard deviation of 2.75 inches. The percent of women whose heights are between 64 and 69.5 inches, to the *nearest whole percent*, is

1) 6
2) 48
3) 68
4) 95

.477 (100)
48%

lower = 64
upper = 69.5
μ = 64
σ = 2.75

normal cdf

5. The weights of students on the boys cross country team is normally distributed with a mean of 135.3 pounds and a standard deviation of 2.8 pounds. If the team has 32 members, how many of them, rounded to the *nearest person,* would be expected to weigh less than 132 pounds?

.114 (32)
4

lower = -9999
upper = 132
μ = 135.3
σ = 2.8

22

6. The lifespan of a 60-watt lightbulb produced by a company is normally distributed *normal cdf* with a mean of 1450 hours and a standard deviation of 8.5 hours. If a 60-watt lightbulb produced by this company is selected at random, what is the probability that its lifespan will be between 1440 and 1465 hours?

1) 0.3803
2) 0.4612
3) 0.8415
4) 0.9612

lower = 1440
upper = 1465
μ = 1450
σ = 8.5

.8415..

normalcdf 7. The number of hours students spent studying for their Regents exam is normally distributed with a mean of 14 hours and a standard deviation of 3.2 hours. If a student is randomly selected, what is the probability that a student spent more than 22 hours studying? Round your answer to the nearest tenth of a percent.

.006..(100) = 0.6%

lower = 22
upper = 99999
μ = 14
σ = 3.2

normal cdf

8. The scores on a math test are normally distributed with a mean of 76.2 and a standard deviation of 4.7. If 248 students took the exam, approximately how many students got between a 70 and an 80?

.697..(248) = 173

lower - 70
upper - 80
μ = 76.2
σ = 4.7

normal cdf

9. The number of hours of sleep employees at a company get per night is normally distributed with a mean of 7.1 hours and a standard deviation of 1.4 hours. If there are 2500 employees at the company, approximately how many of them, to the nearest person, got less than 5 hours of sleep?

.0668..(2500)
167

lower = -99999999
upper = 5
μ = 7.1
σ = 1.4

normalcdf

10. The scores on a mathematics college-entry exam are normally distributed with a mean of 68 and standard deviation 7.2. Students scoring higher than one standard deviation above the mean will not be enrolled in the mathematics tutoring program. How many of the 750 incoming students can be expected to be enrolled in the tutoring program?

1) 631
2) 512
3) 238
4) 119

lower = -99999
upper = 75.2
μ = 68
σ = 7.2

.841..(750)
631

68+7.2 = 75.2

less than 75.2