HuaYangProblemsSet3

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## GBA 5140 Statistics Essentials for Business Analytics

## Problem Set 3

## Probability Distribution

Problem 1 Automobile repair costs continue to rise with the average cost now at $367 per repair (U.S. News & World Report website, January 5, 2015). Assume that the cost for an automobile repair is normally distributed with a standard deviation of $88. Write R code to achieve the following tasks. Post your R code and RStudio output (console output) below each task.

**1.What is the probability that the cost will be more than $450?**

print(paste("the probability that the cost will be more than $450: ",pnorm(450,mean=367,sd=88,lower.tail = FALSE)))

## [1] "the probability that the cost will be more than $450: 0.17279395582725"

**2.What is the probability that the cost will be less than $250?**

print(paste("the probability that the cost will be less than $250: ",pnorm(250,mean=367,sd=88)))

## [1] "the probability that the cost will be less than $250: 0.0918340399757612"

**3.What is the probability that the cost will be between $250 and $450?**

print(paste("the probability that the cost will be between $250 and $450: ",pnorm(450,mean=367,sd=88)-pnorm(250,mean=367,sd=88)))

## [1] "the probability that the cost will be between $250 and $450: 0.735372004196989"

**4.If the cost of your car repair is in the lower 5% of automobile repair charges, what is your cost?**

print(paste("If the cost of your car repair is in the lower 5% of automobile repair charges, cost: ",qnorm(0.05,mean=367,sd=88)))

## [1] "If the cost of your car repair is in the lower 5% of automobile repair charges, cost: 222.25288082827"