5-3 Graph Frequency Distribution
Used Car Mayhem!

Group Names:_____

My Group Title:_____

My description of duties:_____

_____

In this Lab, your team will act as a used car dealership and will be in competition with other dealerships to make the most money. The situation is this:

- It is getting close to the busy season, summer, and your dealership needs to increase the number of cars it has for sale.
- The owner has given you the task of deciding which cars to buy to earn the most profit.
- There are 10 potential cars to buy, and you have given your salespeople research to do on these cars including: past prices of similar cars and whether popularity has increased, stayed the same, or decreased.
- You will only have 30 minutes to decide on all 10 cars, working on one decision at a time.

The rules of the game are this:

- You will draw an "offer card" which has: the offer price at which you *could* buy the car, whether the popularity has increased, stayed the same, or decreased, and the past prices of similar cars.
- If you choose to buy the car, you can reasonably assume you can sell the car at the following rate:
    - The median of past prices if popularity has stayed the same.
    - The first quartile price if popularity has decreased.
    - The third quartile price if popularity has increased
- If the offer price is an outlier, this is a "wild card" and you can buy at the first quartile price and choose to sell at the mean, median, or mode. These are likely to earn a large profit, but you must show all work!
- After 30 minutes, the game stops and your profit/loss is tallied.

Car for Sale: 2002 Hyundai Elantra

Offered at: $4,900

Popularity: Stable

Past Prices:

$3,500	$4,250
$5,000	$4,900
$5,500	$3,200
$6,000	$5,800
$2,900	$3,700

answer: loss of $325

Car for Sale: 2012 Toyota Prius

Offered at: $19,999

Popularity: Increasing

Past Prices:

$16,450	$17,000
$19,750	$19,999
$23,400	$21,000
$23,000	$18,700
$19,250	$24,000

answer: profit of $3,101

Car for Sale: 1988 Porche 944

Offered at: $7,700

Popularity: Stable

Past Prices:

$4,000	$4,800
$5,500	$6,000
$7,000	$12,000
$24,000	

Answer: loss of $1,700

Car for Sale: 2014 Tesla Model S

Offered at: $65,000

Popularity: Increasing

Past Prices:

$50,000	$50,000
$64,000	$72,000
$72,000	$77,000
$88,000	$66,000

Answer: $10,750 profit

Car for Sale: 1992 Honda Accord EX

Offered at: $700

Popularity: increasing

Past Prices:

$3,400	$2,200
$3,000	$2,100
$2,400	$2,000
$1,750	$999

Profit of $2,150

Car for Sale: 1995 Kia Sephia

Offered at: $700

Popularity: decreasing

Past Prices:

$3,400	$2,200
$3,000	$2,100
$2,400	$2,000
$1,750	$999

profit of $1,112

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Report to your boss

Name:_____

Now that your project is complete, your boss would like a report on the profitability. He asked for an ROI summary and recommendations for improving ROI. Because your boss scares you, you nodded your head even though you had no idea what an ROI is! It is now up to you to research what ROI is, and figure it out for your recent purchase of all these used cars. He also wants recommendations for improving ROI for next year. After doing an internet search, here are some websites that looked promising, so feel free to start here:

http://www.investopedia.com/terms/r/returnoninvestment.asp

http://www.entrepreneur.com/article/204854

http://www.pine-grove.com/online-calculators/roi-calculator.htm

http://www.autonews.com/article/20140303/RETAIL/303039973/dealership-profits-keep-soaring

http://www.autodealermonthly.com/channel/dps-office/article/story/2008/10/return-on-investment.aspx

After doing your research, you need to present three things:
1. What is ROI? – explain in clear language.
2. What was your ROI?
3. What could you have done to improve your ROI, what what could your ROI have been?

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Grading Rubric

Group Participation	20 points
• Engagement, inclusiveness, discourse, leadership	_____ / 20
Amount of profit	20 points
• Work shown, correct decisions, finding outliers	_____ / 20
ROI Research	
• Defining and explaining ROI	10 points _____ / 10
• Making suggestions to improve ROI	10 points _____ / 10
• Calculating potential increased ROI	10 points _____ / 10
Total:	_____/70