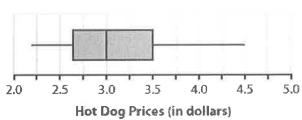
Vo	7
Math	1

7-3 Analyzing Box Plots

- I can calculate the 5-number summary for a set of data.
- I can describe the center and spread of a distribution.
- 1. The following box plot shows the distribution of hot dog prices at Major League Baseball parks.



Source: www.teammarketing.com/fci.cfm?page=fci_mlb2004.cfm

a. What is the shape of the distribution?

Skewed right

b. Estimate the five number summary. Explain what each value tells you about the hot dog prices.

Min = 2.20 and means that the cheapest hot dogs are 2.20

Q1 = 2.65

and means that 25% of hot logs

cose \$2.65 or less

Q2 = 13.00

and means that about 5% of hot days cost 3 or less.

Q3 = 3 50

and means that about 75% of hot Dows cost 3.50 or less.

Max = 4.50

and means that the Most expensive

2. The following Box Plot represents the data for the number of homeruns that Mr. Pinto's favorite baseball players hit last year.



Answer the following:

a. Describe the distribution.

Shape: Slewed lety

axters: 14

Center: Median = 36

Spread. IQR=40-30=10

b. What percent of the players hit at least 31 homeruns?

75%

c. Why is the left whisker longer than the right whisker?

The duta point of 20 is further from OI than the maximum value

is from Q3.

Maria's Grades 8, 9, 6, 7, 9, 8, 8, 6, 9, 9, 8, 7, 8, 7, 9, 9, 7, 7, 8, 9 Tran's Grades 9, 8, 6, 9, 7, 9, 8, 4, 8, 5, 9, 9, 9, 6, 4, 6, 5, 8, 8, 8 Gia's Grades 10, 7, 7, 9, 5, 8, 7, 4, 7, 5, 8, 8, 8, 6, 6, 6, 8, 8, 8, 6, 6, 6, 3, 8, 8, 9 Jack's Grades 8, 8, 7, 9, 7, 8, 8, 6, 8, 7, 8, 7, 8, 7, 8, 8, 8, 7, 8, 8, 8, 7, 8, 8, 8, 0, 9, 9 a. Make the box plot for Susan's grades next to the letter S above. b. The plots for Maria and Tran have no whiskers at the upper end because The CO3' is the Sare value as the material and the material distribution is grades next to the left are Tran to wer whisker. Her lowest Kere Might be an after than the other sources. The students whose distributions are skewed to the left are Tran and Gra e. The student with the most symmetrical distribution is Susan The students with the biggest IQR are Sack and Tran and Gra e. The student with the smallest IQR is Susan g. Does the student with the smallest IQR also have the smallest range? Nope h. What student(s) has/have the largest range? Gra + Sack i. Based on the box plots, San has the best grades because above a 7.5. - Her Late 1 > rore to the tright!	3. Use the box plots below.		
Tran's Grades 9, 8, 6, 9, 7, 9, 8, 4, 8, 5, 9, 9, 9, 6, 4, 6, 5, 8, 8 Gia's Grades 8, 9, 9, 9, 6, 9, 6, 9, 8, 6, 8, 6, 8, 8, 8, 8, 6, 6, 6, 8, 8, 8, 6, 6, 6, 3, 8, 8, 9 Jack's Grades 10, 7, 7, 9, 5, 8, 7, 4, 7, 5, 8, 8, 8, 4, 5, 6, 5, 8, 7 Susan's Grades 8, 8, 7, 9, 7, 8, 8, 6, 8, 8, 7 8, 8, 8, 7, 8, 7, 8, 8, 6, 8, 7, 8, 8, 8, 7, 8, 8, 8, 7, 8, 8, 8, 7, 8, 7, 8, 8, 8, 10, 9, 9, 9 a. Make the box plot for Susan's grades next to the letter S above. b. The plots for Maria and Tran have no whiskers at the upper end because The CQ3 'S the Sare value as the maximum. c. Why is the lower whisker on Gia's box plot so long? Hint: There are NOT more numbers in the lower whisker. Her lowest scare might be an attled law smaller than the other students with the most symmetrical distribution is Susan The students with the biggest IQR are Jack and Tran a	Maria's Grades	Math Homework Grades	
g, 8, 6, 9, 7, 9, 8, 4, 8, 5, 9, 9, 9, 6, 4, 6, 5, 8, 8, 8 Gia's Grades 8, 9, 9, 9, 6, 9, 8, 6, 8, 6, 8, 6, 8, 8, 8, 8, 9, 9, 9, 6, 9, 8, 6, 6, 8, 8, 8, 6, 6, 6, 3, 8, 8, 9 Jack's Grades 10, 7, 7, 9, 5, 8, 7, 4, 7, 5, 8, 8, 8, 4, 5, 6, 5, 8, 7 Susan's Grades 8, 8, 7, 9, 7, 8, 8, 6, 6, 8, 7, 8, 8, 8, 7, 9, 7, 8, 8, 8, 7, 8, 8, 10, 9, 9, 9 a. Make the box plot for Susan's grades next to the letter S above. b. The plots for Maria and Tran have no whiskers at the upper end because The CQ3 is the Same value as the maximum. c. Why is the lower whisker on Gia's box plot so long? Hint: There are NOT more numbers in the lower whisker. Her lowed start might be an after lower screen for the student with the most symmetrical distribution is The student with the most symmetrical distribution is The students whose distributions are skewed to the left are Tran and Gra c. The students with the biggest IQR are Jack f. The students with the biggest IQR are Jack g. Does the student with the smallest IQR also have the smallest range? No pe h. What student(s) has/have the largest range? Gra + Jack i. Based on the box plots, Sam has the best grades because along 75% of	8, 7, 8, 7, 9, 9, 7, 7, 8, 9	M —	
a. Make the box plot for Susan's grades next to the letter S above. b. The plots for Maria and Tran have no whiskers at the upper end because The COB' is the Same Value as the maximum. c. Why is the lower whisker on Gia's box plot so long? Hint: There are NOT more numbers in the lower whisker. Her lowest score Might be an atter Couch Smaller than the other students whose distributions are skewed to the left are Tran and Gra e. The student with the lowest median grade is f. The students with the biggest IQR are Jack and Tran , and the student with the smallest IQR is Swan g. Does the student with the smallest IQR also have the smallest range? No pe h. What student(s) has/have the largest range? Gra + Jack i. Based on the box plots, Swan has the best grades because about 75% of has the best grades because about 75% of has the best grades because about 75% of	9, 8, 6, 9, 7, 9, 8, 4, 8, 5, 9, 9, 9, 6, 4, 6, 5, 8, 8, 8		
10, 7, 7, 9, 5, 8, 7, 4, 7, 5, 8, 8, 8, 4, 5, 6, 5, 8, 7 Susan's Grades 8, 8, 7, 9, 7, 8, 8, 6, 8, 7, 8, 8, 8, 10, 9, 9, 9 a. Make the box plot for Susan's grades next to the letter S above. b. The plots for Maria and Tran have no whiskers at the upper end because Their Q3 is the Same value as the maximum. c. Why is the lower whisker on Gia's box plot so long? Hint: There are NOT more numbers in the lower whisker. Her lowest Scare might be an attended than the other students whose distributions are skewed to the left are and Ga e. The students with the biggest IQR are Jack f. The students with the biggest IQR are Jack g. Does the student with the smallest IQR also have the smallest range? h. What student(s) has/have the largest range? Ga + Jack i. Based on the box plots, San has the best grades because above 75% of	8, 9, 9, 9, 6, 9, 8, 6, 8, 6, 8, 8, 8, 6, 6, 6, 3, 8, 8, 9		
a. Make the box plot for Susan's grades next to the letter S above. b. The plots for Maria and Tran have no whiskers at the upper end because The CQ3 is the Same value as the maximum. c. Why is the lower whisker on Gia's box plot so long? Hint: There are NOT more numbers in the lower whisker. Her lowest scre might be an attler (much smaller than the other student with the most symmetrical distribution is Susan. The students whose distributions are skewed to the left are Tran, and Ga. e. The students with the lowest median grade is Sack. f. The students with the biggest IQR are Jack and Tran, and the student with the smallest IQR is Susan. g. Does the student with the smallest IQR also have the smallest range? Nope. h. What student(s) has/have the largest range? Ga + Jack i. Based on the box plots, Susan has the best grades because about 75% of	10, 7, 7, 9, 5, 8, 7, 4, 7, 5, 8, 8, 8, 4, 5, 6, 5, 8, 7		
b. The plots for Maria and Tran have no whiskers at the upper end because Their Q3 is the same value as the maximum. c. Why is the lower whisker on Gia's box plot so long? Hint: There are NOT more numbers in the lower whisker. Her lowest scare might be an affect lower smaller than the other scare. d. The student with the most symmetrical distribution is Susan. The students whose distributions are skewed to the left are Tran, and Gia. e. The student with the lowest median grade is Sack. f. The students with the biggest IQR are Sack and Tran, and the student with the smallest IQR is Susan. g. Does the student with the smallest IQR also have the smallest range? No pe. h. What student(s) has/have the largest range? Gia + Sack i. Based on the box plots, San has the best grades because above 75% of	8, 8, 7, 9, 7, 8, 8, 6, 8, 7,	peru-4-1-1 in calc	
Their Q3 is the same value as the maximum. c. Why is the lower whisker on Gia's box plot so long? Hint: There are NOT more numbers in the lower whisker. Her lowest scare might be an artiser (much smaller than the other scores.) d. The student with the most symmetrical distribution is Susan The students whose distributions are skewed to the left are Tran, and Gia e. The student with the lowest median grade is Sack f. The students with the biggest IQR are Sack and Tran, and the student with the smallest IQR is Susan g. Does the student with the smallest IQR also have the smallest range? Nope. h. What student(s) has/have the largest range? Gia + Sack i. Based on the box plots, Sac has the best grades because about 75% of	a. Make the box plot for Susa	n's grades next to the letter S above.	
lower whisker. Her lowest Score Might be an artier (much smaller than the other scores). d. The student with the most symmetrical distribution is Susan. The students whose distributions are skewed to the left are Tran, and Gra. e. The student with the lowest median grade is Sack. f. The students with the biggest IQR are Sack and Tran, and the student with the smallest IQR is Susan. g. Does the student with the smallest IQR also have the smallest range? No pe. h. What student(s) has/have the largest range? Gra + Sack i. Based on the box plots, San has the best grades because daix 75% of	b. The plots for Maria and Tran have no whiskers at the upper end because Their Q3 is the same value us the maximum.		
The students whose distributions are skewed to the left are Tran, and Ga. e. The student with the lowest median grade is Sack f. The students with the biggest IQR are Sack and Tran, and the student with the smallest IQR is San g. Does the student with the smallest IQR also have the smallest range? No pe. h. What student(s) has/have the largest range? Ga + Sack i. Based on the box plots, San has the best grades because day 75% of	lower whisker. Her lowest score might be an author Lnuch smaller than the other Scores		
The students whose distributions are skewed to the left are Tran, and Gia. e. The student with the lowest median grade is Sack f. The students with the biggest IQR are Sack and Tran, and the student with the smallest IQR is Susan g. Does the student with the smallest IQR also have the smallest range? Nope h. What student(s) has/have the largest range? Gia + Sack i. Based on the box plots, Sach has the best grades because about 75% of	d. The student with the most	symmetrical distribution is	
e. The student with the lowest median grade is	The students whose distributions are skewed to the left are,		
f. The students with the biggest IQR are Jack and Tran, and the student with the smallest IQR is Sosan. g. Does the student with the smallest IQR also have the smallest range? Nope. h. What student(s) has/have the largest range? Ga + Jack i. Based on the box plots, Sosan has the best grades because about 75% of		t median grade is Sack	
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i. Based on the box plots, Son has the best grades because about 75% of	g. Does the student with the s	smallest IQR also have the smallest range? Nope	
i. Based on the box plots, Son has the best grades because about 75% of	h. What student(s) has/have t	he largest range? Ga + Jack	
	i. Based on the box plots,	has the best grades because Glain 75% of	