Mathematics Assessment Activity #12:

Jumping to Conclusions

The ten highest National Basketball League salaries are found in the table below. Numbers like these lead us to believe that all professional basketball players make millions of dollars every year.

Mathematics Assessed:

- Ability to support or refute a claim;
- Understanding of mean, median, mode, and range;
- Calculation of mean, median, mode and range;
- Problem solving; and
- Communication

While all NBA players make a lot, they do not all earn millions of dollars every year.

NBA top 10 salaries for 1999-2000

No.	Player	Team	Salary
1.	Shaquille O'Neal	L.A. Lakers	$17.1 million
2.	Kevin Garnett	Minnesota Timberwolves	$16.6 million
3.	Alonzo Mourning	Miami Heat	$15.1 million
4.	Juwan Howard	Washington Wizards	$15.0 million
5.	Patrick Ewing	New York Knicks	$15.0 million
6.	Scottie Pippen	Portland Trail Blazers	$14.8 million
7.	Hakeem Olajuwon	Houston Rockets	$14.3 million
8.	Karl Malone	Utah Jazz	$14.0 million
9.	David Robinson	San Antonio Spurs	$13.0 million
10.	Jayson Williams	New Jersey Nets	$12.4 million

As a matter of fact according to data from USA Today (12/8/00) and compiled on the website "Patricia's Basketball Stuff" http://www.nationwide.net/~patricia/ the following more accurately reflects the salaries across professional basketball players in the NBA.

Salaries of NBA Basketball Players - 2000

Number of Players	Salaries
2	$19 to 20 million
0	$18 to 19 million
0	$17 to 18 million
3	$16 to 17 million
1	$15 to 16 million
3	$14 to 15 million
2	$13 to 14 million
4	$12 to 13 million
5	$11 to 12 million
15	$10 to 11 million
9	$9 to 10 million
11	$8 to 9 million
8	$7 to 8 million
8	$6 to 7 million
25	$5 to 6 million
23	$4 to 5 million
41	3 to 4 million
92	$2 to 3 million
82	$1 to 2 million
130	less than $1 million
464	**Total**

According to this source the average salaries for the 464 NBA players in 2000 was $3,241,895.

Jumping to Conclusions - Many basketball players would say that this number is deceiving. They would *claim* that most basketball players don't earn $3,241,895.

Your job in this activity is to support or refute the claim that "most basketball players do not earn $3,241,895" using the data that your teacher provides you with on the 2000 salaries for each NBA team. You may also use the data provided above to help evaluate the claim.

In order to evaluate and then support or refute the claim complete the following:

1) Select at least three teams to help evaluate the claim. Justify your selection of teams as good choices to help evaluate the claim.
2) Determine the range, mean, median, and mode of at least three teams and do any other analysis you think necessary with the data provided above, the data across all the teams or across some of the teams to help evaluate the claim.
3) Provide an explanation on how each measure of central tendency (mean, median, mode, or range) and any other analysis you did helps to evaluate the claim. *Provide specific examples from your analysis to make your case.*
4) Support or refute the claim ("most basketball players do not earn $3,241,895") using the measure(s) of central tendency or other analysis that best reflects the situation and your decision to support or refute the claim. *Provide specific examples from your analysis to make your case.*

Optional: Determine the interquartile ranges and/or standard deviations for each of the teams that you analyzed. Explain in what ways this information supports or refutes the claim. Does it provide you with information that is contradictory to or supportive of your findings? Provide specific examples to make your case.

Note: Your teacher will provide you with team-by-team data.

Teacher Supplement

Mathematics Assessment Activity #12:

Jumping to Conclusions

Description: In this assessment activity students will analyze data from the salaries of National Basketball Association (NBA) players and then make a case based upon this analysis that supports or refutes the claim that the majority of the basketball players make less than $3 million dollars.

Source: Center for Assessment

Important: To assure that you know the values that were calculated, ask the students to include a list of the players that they included in their calculations. Early pilots showed that students with more knowledge of the NBA included or excluded players without teachers realizing it.

Prerequisites:

- Calculation and interpretation of mean, median, mode, and range.
- Experience evaluating claims using sets of data and measures of central tendencies.

Optional: Interquartile ranges, box plots, and standard deviation

Resources: Data attached.

Intended Depth of Knowledge: Level 3 – Prove or disproved conjectures, develop and/or explain arguments, solve a complex problem(s) that requires planning as part of solution process, and explain thinking.

Suggested use in BOE system: This assessment activity is best used in the BOE system for graduation in any high school mathematics course that focuses on the Wyoming statistics standards.

Note: Salaries found after student exemplars.

Solution - Mathematics Assessment Activity #12:

Jumping to Conclusions

Possible solution: Because students may select teams for their analysis, answers will vary. The following is one possible approach a student can take:

- Students should justify their choice of teams with some intentional process – random selection or selection including a very high or very low team; or,

- Salaries of some professional basketball teams in the year 1999-2000: Determine the range, mean, median, and mode for at least three teams.

Examples of two teams:

Boston Celtics: According to the data, there were 18 players who shared $51.5 million. The mean salary of these players was $2.86 million. The range of the salaries was $10.1m - $.3m = $9.8m. The median salary was ($2.3m + $2.1m)/2 = $2.2m. The mode was $0.3m.

Miami Heat: According to the data, there were 18 players who shared $73.4 million. The mean salary of these players was $4.08 million. The range of the salaries was $16,880,000 - $16,000, approximately $16.9million. The median salary was ($2,290,000 + $2,250,000)/2, approximately $2.3 million. There was no mode since all of the players earned different salaries.

Analysis across teams:

Of the 464 players, there were 119 who earned salaries of $4 million and higher. Looking at the salaries of the 41 players earning between $3 million and $4 million, there were about 10 of them (about one fourth of the 41) who earned more than $3 million but less than the mean salary of $3,241,895. There were approximately 30 of the 41 whose salaries were above the median salary of $3,241,895. That makes about 119 + 30 = 149 of the 464 players whose salaries were above the mean salary. That is about 28% of the 464 players. Just over one quarter of the NBA players earned at least $3,241,895 in the 1999-2000 season.

Another look at the variation of the salaries comes from the inter-quartile range.

For the Boston Celtics, the inter-quartile range is $3.6 million.

For the Miami Heat, the inter-quartile range is $5.55 million.

These numbers show that there is a lot of variation in the size of salaries of the NBA players. With such large inter-quartile ranges, then it means that a sizeable number of players are making a lot more than the median salary and a sizeable number of players are making a lot less than the median salary.

The standard deviations of the salaries are these:

Boston Celtics: $2.6 million

Miami Heat: $4.6 million

These numbers also show how much the salaries vary, and in particular for the Heat: on the average, the salaries of the Miami Heat players are about $4.6 million off of the mean.

Mathematics Standards and Benchmarks
An "A" in the table below indicates the standards and benchmarks in this assessment activity that have the potential to elicit evidence of student learning. An "I" indicates that instructional strategy that is assumed, but not assessed. An "A*" indicates the standards and benchmarks that are assessed only by the optional component. This activity has been recoded to the revised Wyoming 2003 Standards by members of the Wyoming Body of Evidence Activities Consortium.

11.1 NUMBER AND OPERATIONS

Students use numbers, number sense, and number relationships in a problem-solving situation.
*Note: Students communicate the reasoning used in solving these problems. They may use tools/technology to support learning.

	Benchmarks
A	11.1.1 Students represent and apply real numbers in a variety of forms.
A	11.1.2 Students apply the structure and properties of the real number system.
A	11.1.3 Students explain their choice of estimation and problem solving strategies and justify results of solutions in problem-solving situations involving real numbers.
	11.1.4 Students use proportional reasoning to solve problems.

11.2 GEOMETRY

Students apply geometric concepts, properties, and relationships in a problem-solving situation.
*Note: Students communicate the reasoning used in solving these problems. They may use tools/technology to support learning.

	Benchmarks
	11.2.1 Students use transformations, congruency, symmetry, similarity, perpendicularity, parallelism, and the Pythagorean Theorem to solve problems.
	11.2.2 Students communicate, using mathematical language, to: Interpret, represent or create geometric figures; draw or build figures from a mathematical description;analyze properties and determine attributes of 2- and 3- dimensional objects.
	11.2.3 Students communicate the reasoning used in identifying geometric relationships in problem-solving situations.
	11.2.4 Students solve problems involving the coordinate plane such as the distance between two points, the midpoint, and slope.
	11.2.5Students connect geometry with other mathematical topics.

11.3 MEASUREMENT

Students use a variety of tools and techniques of measurement in a problem-solving situation.
*Note: Students communicate the reasoning used in solving these problems. They may use tools/technology to support learning.

	Benchmarks
	11.3.1 Students apply estimation and measurement using the appropriate methods and units to solve problems involving length, weight/mass, area, surface area, volume, and angle measure.
	11.3.2 Students demonstrate an understanding of both metric and U.S customary systems. Students are able to convert within each system.

	11.3.3 Students identify and apply scale, ratios, and proportions in solving measurement problems.
	11.3.4 Students solve problems of angle measure including those involving polygons or parallel lines cut by a transversal.
	11.3.5 Students solve indirect measurement problems.

11.4 ALGEBRA

Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

*Note: Students communicate the reasoning used in solving these problems. They may use tools/technology to support learning.

	Benchmarks
	11.4.1 Students use algebraic concepts, symbols, and skills to represent and solve real-world problems.
	11.4.2 Students write, model, and evaluate expressions, functions, equations, and inequalities.
	11.4.3 Students graph linear equations and interpret the results in solving algebraic problems.
	11.4.4 Students solve, graph, or interpret systems of linear equations.
	11.4.5 Students connect algebra with other mathematical topics.

11.5 DATA ANALYSIS AND PROBABILITY

Students use data analysis and probability to analyze given situations and the results of experiments.

*Note: Students communicate the reasoning used in solving these problems. They may use tools/technology to support learning.

	Benchmarks
A	11.5.1 Students apply knowledge of mean, median, mode, and range to interpret and evaluate information and data.
A	11.5.2 Students draw reasonable inferences from statistical data and/or correlation/best fit line to predict outcomes.
	11.5.3 Students communicate about the likelihood of events using concepts from probability. sample space evaluate simple probabilities evaluate experimental vs. theoretical
A	11.5.4 Students determine, collect, organize, and analyze relevant data needed to make conclusions.

Assessment Guide: Mathematics Assessment Activity #12: Jumping to Conclusions!

Problem Solving and Concepts Criterion: *Uses appropriate mathematical concepts, skills, properties and relationships to investigate and solve problems.* **Standards and Benchmarks** 11.1.1 & 2 ; 11.5.1 & 2 & 4 **Intended Depth of Knowledge**: **Level 3**

Level 4	Level 3	Level 2	Level 1
Meets requirements of level 3 and justifies selection of team as a good choice to evaluate the claim including method to select teams. AND Includes one of the following: • Appropriately and accurately uses interquartile ranges or standard deviation to help support or refute the claim. OR • A connection or extension of the mathematics is made related to the topic or mathematical idea, such as: a) Extends the problem by investigating other aspects of the problem; or b) Connection between mathematical ideas to other problems, or to other disciplines; or c) Use of mathematical idea to solve a similar, but more complicated problem.	Provides a mathematical rationale on how the measures of central tendency calculated helps to evaluate the claim using specific examples from analysis. Supports or refutes the claim (or the claim they identified) using the measure(s) of central tendency or other analysis across teams that best reflects the situation and the decision to support or refute the claim. Key specific examples from analysis are provided to make the case. There may be minor errors or omissions in the solution. **Support:** The student received no support or minor support.	There is an attempt to justify the claim, but the justification: ▪ Provides only a definitional explanation of the measures of central tendency, and does not explain how the measures of central tendency help to evaluate the claim. OR ▪ Supports or refutes the claim with a limited analysis or the data is not used accurately or appropriately to support or refute claim. OR ▪ Provides the mean, median, mode, or range across the three teams that may be inadequate to support or refute the claim. OR ▪ Justification does not consider other analysis across the three teams or other data across the teams. OR **Support:** Response fulfills requirements of a Level 3, but the student received support without which the work would not be of a Level 3 quality.	Justification considers teams individually, not across teams. OR There is no justification. OR The solution is incomplete. OR **Support:** Response fulfills the requirements of a Level 2, but the student received support without which the work would not be of a Level 2 quality.

Check the standards in which the concepts, skills, properties, or relationships were used to solve the problem.

____ 11.7 Problem Solving ____ 11.5 Probability and Statistics ____ 11.6 Technology

Assessment Guide: Mathematics Assessment Activity #12: Jumping to Conclusions!

Representation – Tables, Graphs, Diagrams, or Models: *Represents accurately, appropriately, and effectively.*
Standards: 11.5.2 & 4 **Intended Depth of Knowledge: Level 2**

Level 4	Level 3	Level 2	Level 1
Representations are accurate, appropriate, can be used effectively for the situation meeting the requirements of Level 3, and include other elements, such as: • Data set displayed in multiple ways; or • Data represented in multiple ways to make a point; or • Data represented in multiple ways to show a trend; or • Model(s) or diagram(s) used to explain a concept; or • Model(s) or diagram(s) used solve a problem; or • Data represented in multiple ways, models, or diagrams that promote an understanding or extension of the problem.	Any tables, graphs, models or diagrams are appropriate for representing the data or concepts. There may be some flaws, but the flaws do not negatively impact the understanding or use of the data, diagram or model. Conventions of representation to consider: • Data tables have titles, correct values, and labels • Graphs have o appropriate titles; o correct scaling; o independent and dependent variables labeled correctly; and o points accurately plotted. o Models and diagrams are labeled. **Support:** The student received no support or minor support.	Data tables, graphs, models, or diagrams used have a significant flaw(s) that negatively impacts the understanding or use of the representation, such as: • Data is collected in tables, but is not organized or correctly titled and labeled; or • The graph selected is inappropriate for representing the situation; or • The graph contains errors in conventions (labeling, scaling, or plotting points); or • Application of the conventions of graphing in inconsistent. • The diagram or models is unclear – (no labels, titles, and explanation). OR **Support:** Response fulfills requirements of a Level 3, but the student received support without which the work would not be of a Level 3 quality.	An attempt is made to organize or graph the data, or use a model or diagram, but the representation cannot be used to effectively represent the situation. OR Some tables, graphs, diagrams, or model are missing or have convention errors throughout. OR **Support:** Response fulfills the requirements of a Level 2, but the student received support without which the work would not be of a Level 2 quality.

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Number Operations/calculation: Accurately calculates mean, median, and range.

Standards and Benchmarks: 11.1.1 & 2 **Intended Depth of Knowledge: Level 1**

(**Note**: If an answer is correct, the assumption is that the underlying calculations are correct.)

Level 4	Level 3	Level 2	Level 1
Solution is correct based on appropriate and accurate calculation of mean, median, and range.	Mean, median, and range are calculated accurately. There may be minor errors that don't affect the final outcome/decision. OR Minor flaw consistently carried throughout. **Support:** The student received no support or minor support.	Consistent errors in the calculation of mean, median, or range. OR **Support:** Response fulfills requirements of a Level 3, but the student received support without which the work would not be of a Level 3 quality.	Evidence supports student's inability to calculate the mean, median, and range. OR **Support:** Response fulfills the requirements of a Level 2, but the student received support without which the work would not be of a Level 2 quality.

Assessment Guide: Mathematics Assessment Activity #12: Jumping to Conclusions!

Mathematical Communication: *Communicates mathematically to explain reasoning and solution.*
Standards: 11.1.3 ; 11.5 **Intended Depth of Knowledge**: **Level 2**
(Note: This criterion assesses how well a student communicates the solution, not conceptual understanding or the accuracy of the solution.)

Level 4	Level 3	Level 2	Level 1
Response includes the use of consistent, accurate, and appropriate symbolic or formal notation, and the text included enhances the understanding of the mathematics or logic used, while minimizing descriptions of procedures or calculations already evident in the work. AND Includes additional aspects of strong mathematical communication such as: • Clear links between the different parts of the activity; • Accurate and appropriate use of more than one type of representation with a clear linkage between the representation and the text and the representations with each other; or • Clear links between an equation(s) or formula(s) and a model(s), diagram(s), or graph(s) and the text.	Presentation is communicated: • Using mathematical terms or notation that are accurately and appropriately applied (There may be some minor flaws); • With a logical presentation; • Using tables, graphs, models, diagrams, calculations, or text, where appropriate, but the reader may have to make connections between them; and • Using grammar and conventions that do not get in the way of understanding the results of the solution. There may be some inconsistencies in the presentation.	Use of accurate and appropriate mathematical terms or notation is inconsistent, or some common terms are used instead of mathematical terms. OR Parts of the presentation are not logical. OR The application of grammar and conventions get in the way of understanding reasoning or solution path. OR **Support:** Response fulfills requirements of a Level 3, but the student received support without which the work would not be of a Level 3 quality.	Mathematical terms or notation are used, but they are inaccurate throughout the presentation, or common terms are used instead of mathematical terms. OR The presentation is not logical or there is little work or explanation. OR The application of grammar and conventions make it impossible to understand reasoning or solution path. OR **Support:** Response fulfills the requirements of a Level 2, but the student received support without which the work would not be of a Level 2 quality.

Mathematics Assessment Activity # 12:

Jumping to Conclusions

Anchor Papers

This section contains sample student work that has been assessed by Wyoming teachers who participated in the Wyoming Activities-Based Consortium. Using the rubrics for this mathematics assessment activity, each example has been assigned score levels and includes accompanying annotated student work and "justifications" explaining assignment of scores.

The examples represent a range of student work collected as a result of piloting in Wyoming high schools during the 2000- 2002 school years. In some cases sample student work for particular score points or for particular parts of assessment activities was not available at the date of publication. The BOE Assessment Activities Consortium will add sample student work for those parts and at those score points as they become available.

Anchor papers in this set include:

JC2-066
JC2-002
JC2-008
JC2-005
JC2-046

Mathematics Assessment Activity: # 12: Jumping to Conclusions

Anchor #: JC2-066

Criterion: Problem Solving and Concepts **Level: 3**

This is a level 3 response because appropriate skills and concepts are applied to determine mean, median, mode, and standard deviation for the three teams and for the players across the three teams ("overall mean"). Mathematical rationales are evidenced that demonstrate how each measure helps to evaluate and support the claim ("most basketball players do not…median was $930,000 which means that over half of players are earning at or below ….". "the standard deviation…").

Even though the response includes extensions (Determined the mean across the players of the 3 teams, used the standard deviation to evaluate the claim, and evaluated the teams at the beginning and the end of the season) this is a level 3, not a level 4 response, because the rationale for selecting the teams was biased.

Criterion: Representation **Level: 4**

This is a level 4 response because the response includes multiple representations that promote an understanding of the problem. There are 2 data tables, one that shows the measures of central tendency for salaries of all players at the beginning of the season, and a 2nd table shows the measures for salaries for only those players that complete the season. There is also a 3-D bar graph that provides a visual display of the similarities and differences between the teams and the measures. All representations are titled and axes are labeled correctly.

Criterion: Number Operations/Calculation **Level: 4**

This is a level 4 response because all measure of central tendency values are correct.

Criterion: Mathematical Communication **Level: 4**

This is a level 4 response because there is a clear link between the data and claim. Values from the data tables are referenced in defense of the claim. Mathematical terminology (mean, median, mode, range, standard deviation) are accurately and appropriately used throughout. ("The standard deviation for each of the teams…that tells me that the average isn't a good indicator…") The response is logical and complete.

Anchor #: JC2-066
Mathematics Assessment Activity #12: Jumping To Conclusions

JC2 -066

The data compiled from the Atlanta Hawks, the Chicago Bulls, and the Utah Jazz supports the claim that *MOST* National Basketball Association players do not earn at or above $3,241,895.00 in yearly salaries. To determine this the range, median, mean, and mode was figured in addition to standard deviation.

I chose the teams I did for biased reasons only. I picked my favorite team in the Western Conference and my favorite team in the Eastern Conference. The Chicago Bulls was a third choice chosen on curiosity. I wanted to know what kind of salary the team that kept Michael Jordan. I was extremely surprised to find that it had the lowest total annual salary paid for the 1999-2000 season. ($27,032,368 versus $44,169,202 in Atlanta and $50,348,426 in Utah.)

Below is a chart including the range, mean, median, mode and standard deviation for each of my chosen teams.

	Atlanta	Chicago	Utah
range	$12,785,073.00	$5,280,000.00	$13,968,294.00
mean	$2,598,188.35	$1,126,348.67	$3,146,776.63
median	$1,625,000.00	$555,000.00	$1,245,360.00
mode	$1,925,000.00	$510,000.00	$5,200,000.00
standard deviation	$3,086,406.63	$1,496,639.99	$4,058,213.14

The range for these three teams was extremely large, $13,980,000.00. Basically, all that that tells me is that one player is earning a lot (in this case $14 million) and another isn't earning anywhere near as much ($20,000).

The mean for these combined teams, which I refer to as "overall", was $1,079,439.00 below the NBA mean ($2,132,456). One thing that needs to be taken into account is that only one of the three teams I picked has a player that was one of the top ten highest paid players. Another aspect I noticed was that several of the players did not

1A

Problem Solving and Concepts: The selection of the teams lacks randomness.

Problem Solving and Concepts: Applied appropriate skills and concepts to determine the range, mean, median, mode and standards deviation of the three teams.

Representation: Although there is no title for the table, the text introduces the table.

Representation: Table for all players that started season with accurate column and row labels.

Problem Solving and Concepts: Determined the mean across the players of the three teams. (Overall mean)

Anchor #: JC2-066
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JC2-066

play the entire year for these teams. They were released early, therefore they did not receive a full years pay. Chicago alone released eleven players before the season's end.

The median in each of the teams is well below what the mean is. The overall median was $930,000.00 which means that over half of players are earning at or below that level. Nine-hundred thirty thousand dollars is a long way from the NBA average of $3,241,895.

The standard deviation for each of the teams is larger than the team mean. That tells me that the average isn't a good indicator of what most people are earning at all. The difference between the overall standard deviation and the overall mean was $841,875.55. That is a huge number that tells me that there are huge gaps in the pay rates. If the average distance from the average is a smaller number it means that the mean is a good approximation of what the majority of players are earning. In these teams the standard deviation was huge! Enough to prove to me that there was no way that the mean was any where close to the norm.

In any case there was a lot of data to support the players claim that *MOST* (over 50%) don't earn as much the NBA average. The part that bothered me was that there were numerous players included in these numbers that did not complete an entire season. Therefore, I was not convinced that they should be entered in the data, so I redid the range, mean, median, mode, and standard deviation for the teams without all the early release players.

Below is a table of the numbers without fourteen of the lower paid players that left the teams prior to season's end.

	ATLANTA	CHICAGO	UTAH
range	$12,435,249.00	$5,270,000.00	$13,688,000.00
mean	$2,960,381.86	$1,769,386.79	$3,557,622.86
median	$1,925,000.00	$1,096,740.00	$1,780,000.00
mode	$1,925,000.00	#N/A	$5,200,000.00
standard deviation	$3,289,927.19	$1,687,050.08	$4,188,051.02

2A

Problem Solving and Concepts: Mathematical rationale that supports claim.

Problem Solving and Concepts: Reevaluated claim excluding released players.

Communication: Clear link between data and claim.

Representation: Table with measures of central tendency for teams at the end of the season.

Calculations: Correct values calculated for median, mean and mode, and standard deviation.

Anchor #: JC2-066
Mathematics Assessment Activity #12: Jumping To Conclusions

Problem Solving and Concepts: Evaluated claim for teams at the end of the season.

JC2-066

Again the ranges are extremely large, especially on the Utah end, but the mean offers a little more insight to the NBA numbers. Utah's average is actually above the NBA average when the early release players are removed. Still that isn't a very good gauge of anything.

The medians are still a lot lower than the average although they have risen considerably, especially Chicago's. I think that the median is one of the best tools for understanding what *MOST* of the players are earning.

The modes remained about the same.

Again, the standard deviation is quite large. In Chicago's case it actually dropped below that team's mean, but the mean rose considerably. The standard deviation grew making the mean a very poor indication of what *MOST* players earn.

All in all I would say that most NBA players don't earn the $3.2 million that the average shows. There are a select few stars that manage to drag the numbers up. Many players don't last very long in the NBA, so they don't get on that gigantic pay scale.

3A

Anchor #: JC2-066
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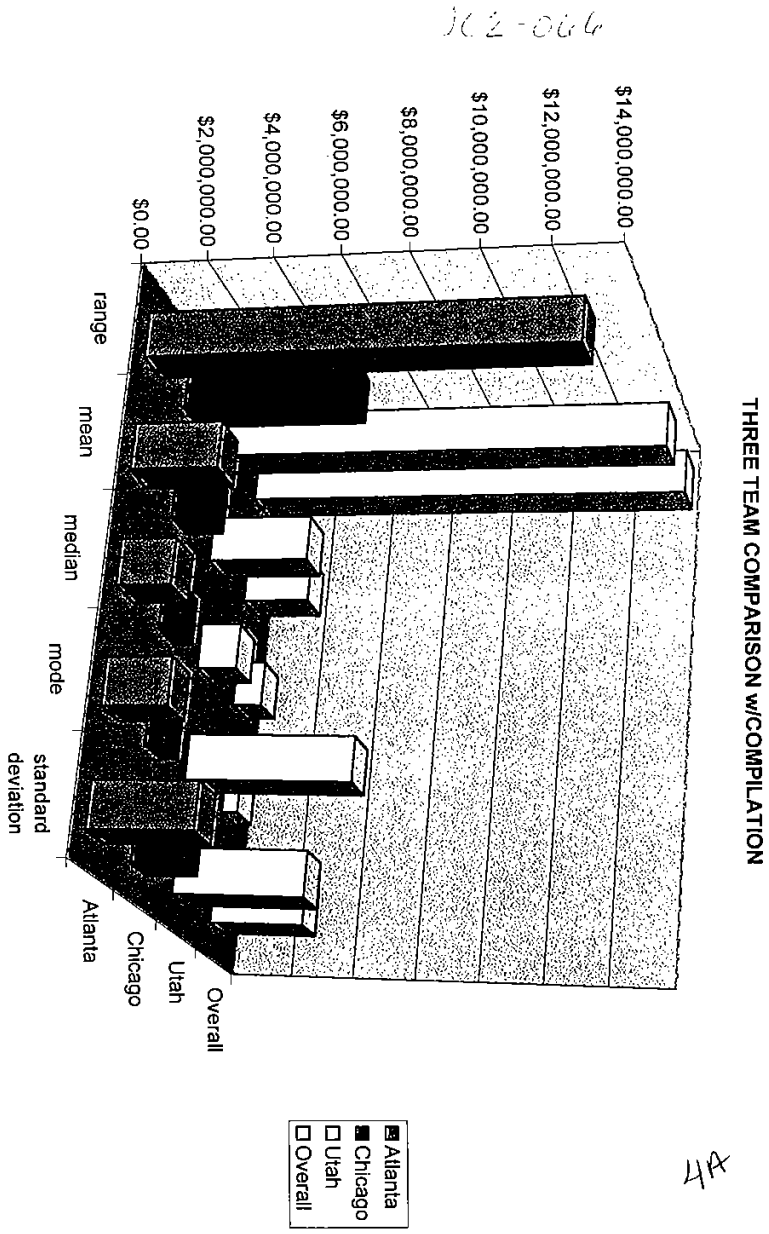
Representation:
Accurately titled, scaled and labeled graph that visually shows the relationships between the measures of central tendency and the team.



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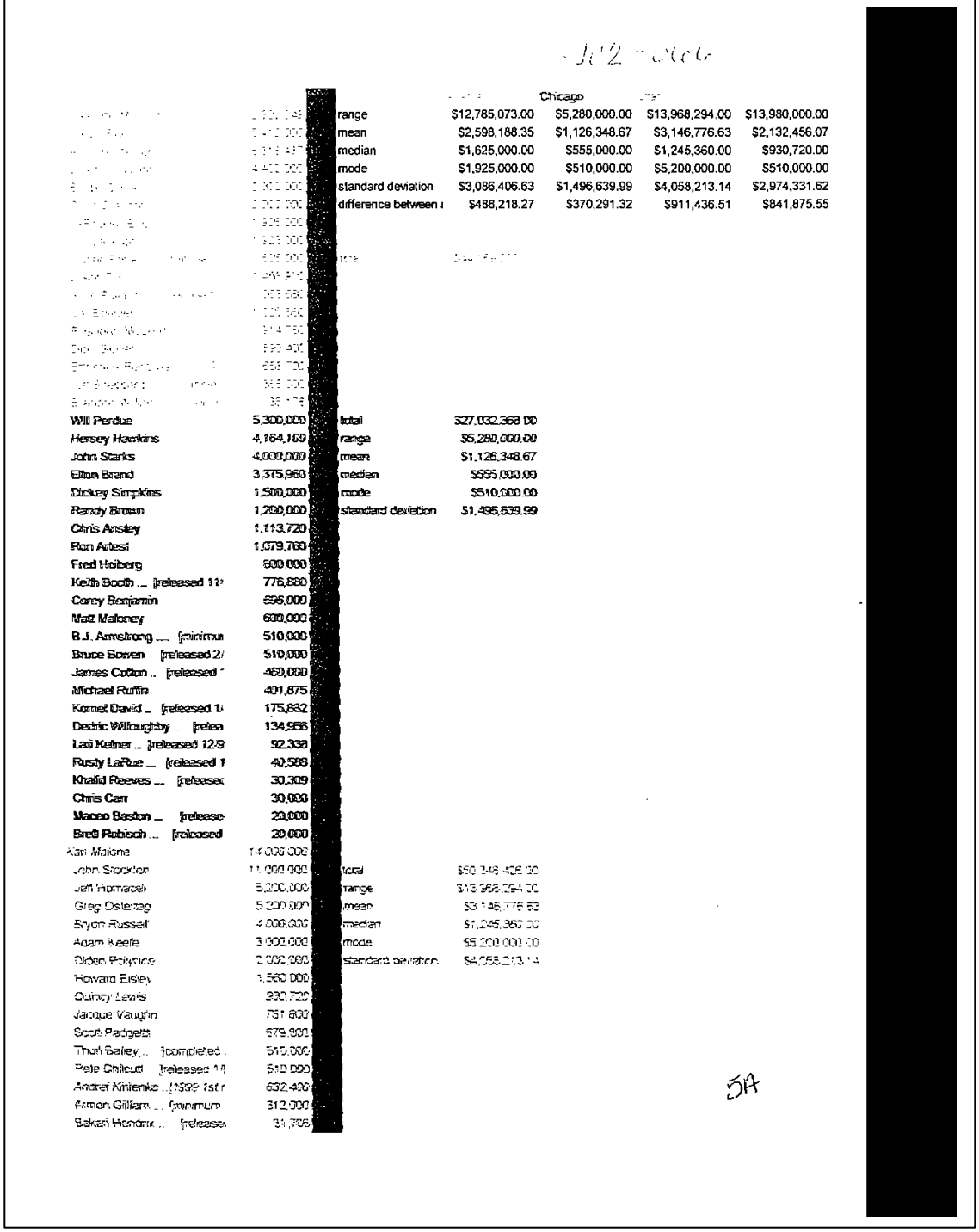
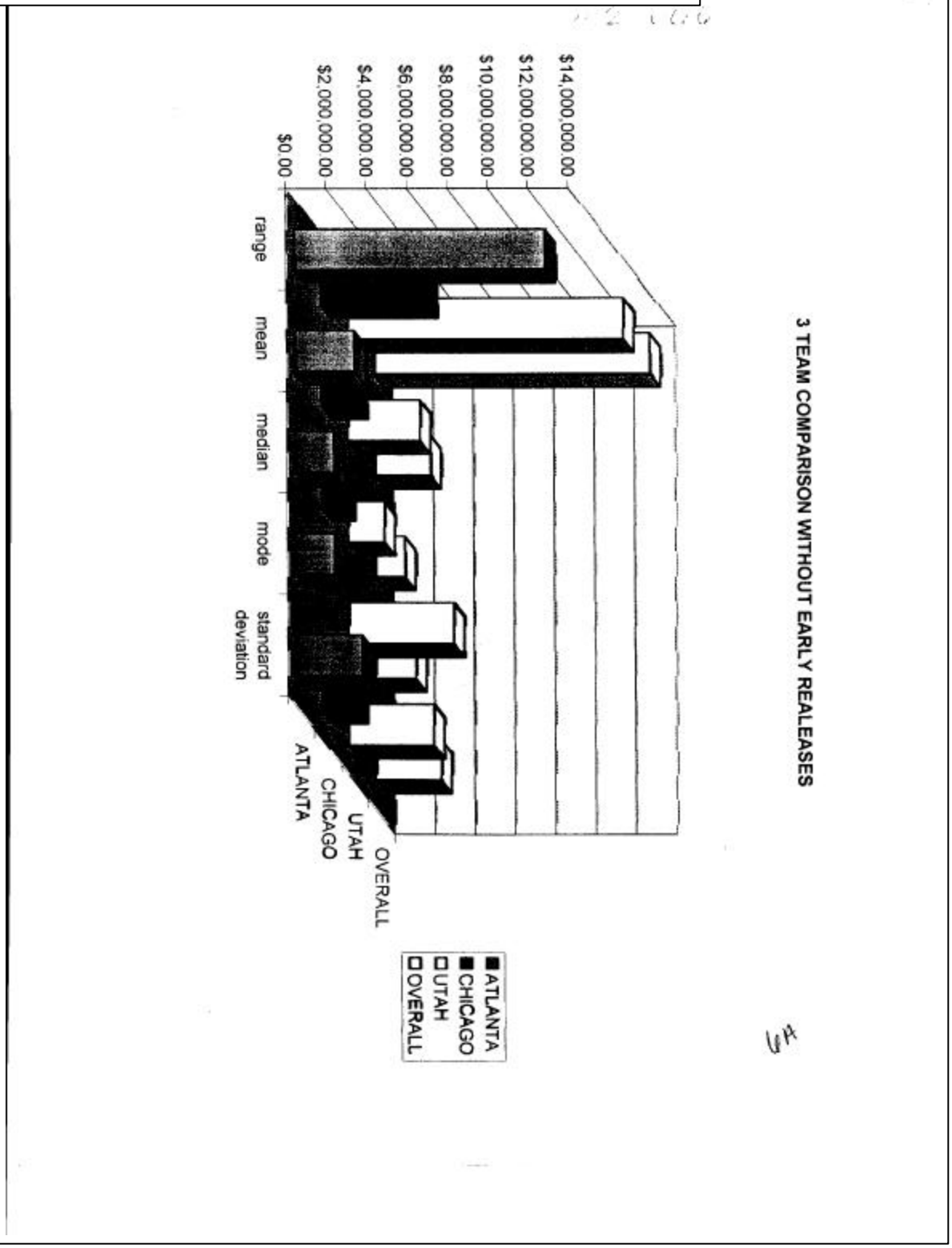


			Chicago			
		range	$12,785,073.00	$5,280,000.00	$13,968,294.00	$13,980,000.00
		mean	$2,598,188.35	$1,126,348.67	$3,146,776.63	$2,132,456.07
		median	$1,625,000.00	$555,000.00	$1,245,360.00	$930,720.00
		mode	$1,925,000.00	$510,000.00	$5,200,000.00	$510,000.00
		standard deviation	$3,086,406.63	$1,496,639.99	$4,058,213.14	$2,974,331.62
		difference between	$488,218.27	$370,291.32	$911,436.51	$841,875.55
Will Perdue	5,300,000	total	$27,032,368.00			
Hersey Hawkins	4,164,169	range	$5,280,000.00			
John Starks	4,000,000	mean	$1,126,348.67			
Elton Brand	3,375,960	median	$555,000.00			
Dickey Simpkins	1,500,000	mode	$510,000.00			
Randy Brown	1,200,000	standard deviation	$1,496,639.99			
Chris Ansley	1,113,720					
Ron Artest	1,079,760					
Fred Hoiberg	600,000					
Keith Booth ... [released 11	776,880					
Corey Benjamin	596,000					
Matt Maloney	600,000					
B.J. Armstrong ... [minimum	510,000					
Bruce Bowen [released 2/	510,000					
James Cotton .. [released '	460,000					
Michael Ruffin	401,875					
Kornel David .. [released 1/	175,882					
Dedric Willoughby .. [relea	134,556					
Lari Kelner .. [released 12/9	92,338					
Rusty LaRue ... [released 1	40,568					
Khalid Reeves ... [released	30,309					
Chris Carr	30,000					
Maceo Baston ... [release	20,000					
Brad Robisch ... [released	20,000					
Karl Malone	14,000,000					
John Stockton	11,000,000	total	$50,348,425.00			
Jeff Hornacek	5,200,000	range	$13,968,294.00			
Greg Ostertag	5,200,000	mean	$3,146,776.63			
Bryon Russell	4,000,000	median	$1,245,360.00			
Adam Keefe	3,000,000	mode	$5,200,000.00			
Olden Polynice	2,000,000	standard deviation	$4,058,213.14			
Howard Eisley	1,560,000					
Quincy Lewis	930,720					
Jacque Vaughn	781,800					
Scott Padgett	679,800					
Thurl Bailey ... [completed	510,000					
Pete Chilcutt [released 11	510,000					
Andrei Kirilenko ... [1999 1st r	632,400					
Armon Gilliam ... [minimum	312,000					
Baker Hendric ... [release	31,305					

5A

Anchor #: JC2-066
Mathematics Assessment Activity#12: Jumping to Conclusions



Anchor #: JC2-066

Mathematics Assessment Activity#12: Jumping To Conclusions

JC 2 - 066

			CHICAGO			
12,930,249	range	$12,435,249.00	$5,270,000.00	$13,688,000.00	$13,888,000.00	
5,410,000	mean	$2,960,381.88	$1,769,386.79	$3,557,622.86	$2,782,483.83	
5,318,437	median	$1,925,000.00	$1,098,740.00	$1,780,000.00	$1,484,480.00	
4,400,000	mode	$1,925,000.00	#N/A	$5,200,000.00	$2,000,000.00	
2,360,000	standard deviation	$3,289,927.19	$1,887,050.08	$4,188,051.02	$3,234,460.08	
2,000,000	difference between standard deviation and mean	$329,545.33	-$82,336.70	$630,428.16	$471,998.25	
1,925,000						
1,925,000						
1,468,920						
1,035,880						
914,760						
893,400						
658,760						
385,000						
	range	$5,270,000.00				
5,300,000	mean	$1,769,386.79				
4,164,100	median	$1,098,740.00				
4,000,000	mode	#N/A				
3,375,960	standard deviation	$1,887,050.08				
1,500,000						
1,200,000						
1,113,720						
1,079,760						
800,000						
696,000						
600,000						
510,000						
491,875						
30,000						
14,000,000	range	$13,888,000.00				
11,000,000	mean	$3,557,622.86				
5,200,000	median	$1,780,000.00				
5,200,000	mode	$5,200,000.00				
4,000,000	standard deviation	$4,188,051.02				
3,000,000						
2,000,000						
1,560,000						
930,720						
781,800						
678,800						
510,000						
632,400						
312,000						

7A

Mathematics Assessment Activity #12: Jumping to Conclusions

Anchor Paper: #JC2-002

Criterion: Concepts and Problem Solving **Level: 3**

The response mentions that the teams were randomly selected, each measure of central tendency is used to evaluate the claim, and the response includes an analysis of the percentage of players above average is appropriate ("… only 29% make above average") to refute the claim that "most basketball players earn $3,241,895." This is a level 3, not a 4, because there is some faulty reasoning. "Nuggets came close because they have one less player than…" and the mode is incorrectly identified for the Nuggets.

Criterion: Representation - Tables, graphs, models, or diagrams **Level: 3**

This is a level 3 response because the data is organized into a table with accurate labels. Although there is no title to the table, the table is referenced in the text directly below the table.

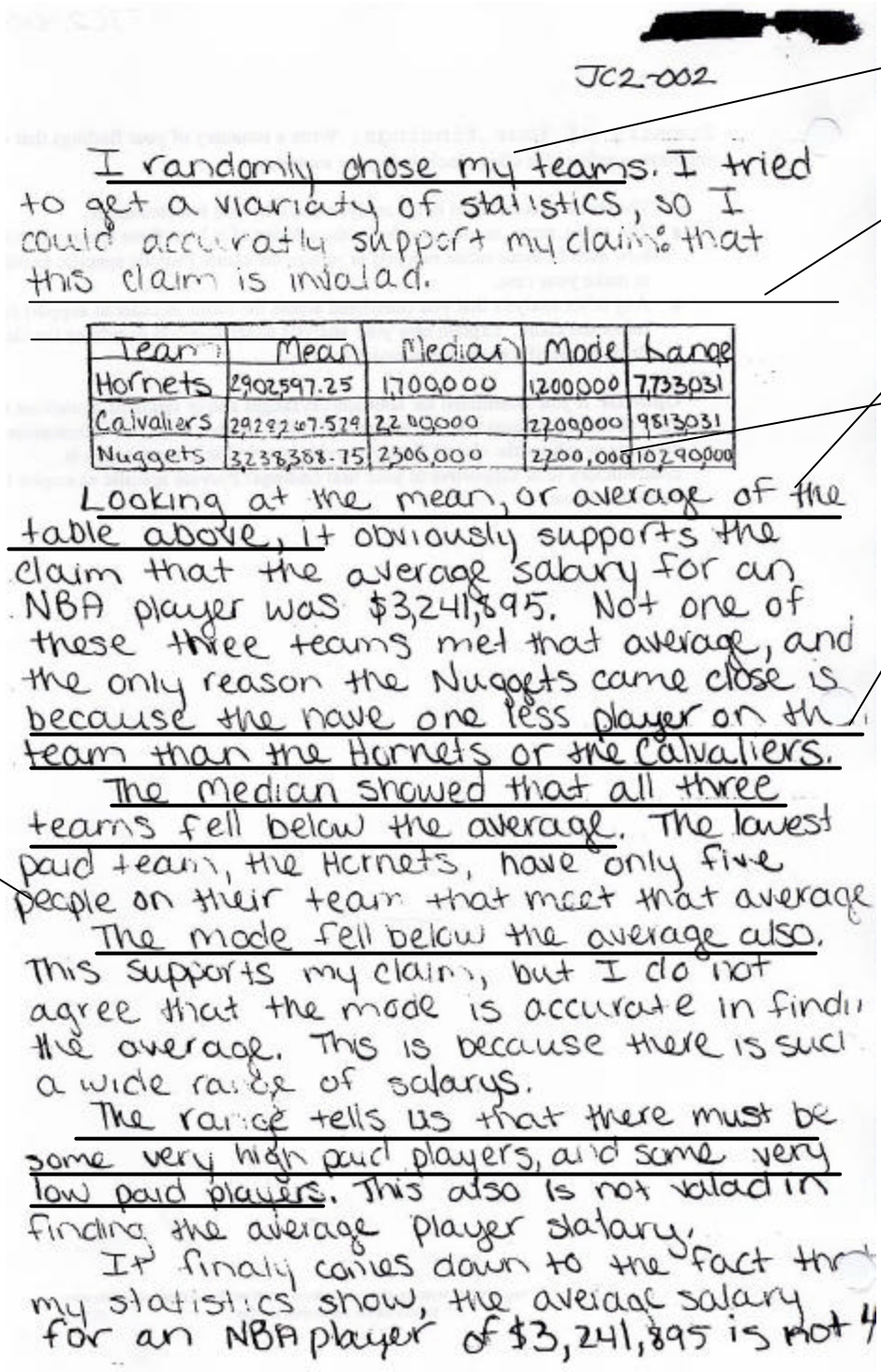
Criterion: Calculation **Level: 2**

This is a level 3 response because the means, medians and range for all teams are calculated accurately. This is a 3, not a 4, because there is a flaw in calculating the percent of teams above the average. It is accurate that 29% of the Cavalier players have salaries above the average, but it is not correct that there are 29% of the other two teams above the mean (37% of the Nuggets and 31% of the Hornets are above average).

Criterion: Communication **Level: 3**

This is a level 3 response because mathematical vocabulary (mean, median, mode, range) are accurately and appropriately used and conventions do not get in the way of understanding the solution.

Mathematics Assessment Activity # 12: Jumping to Conclusions
Anchor #: JC2-002



JC2-002

I randomly chose my teams. I tried to get a variety of statistics, so I could accurately support my claim that this claim is invalad.

Team	Mean	Median	Mode	Range
Hornets	2902597.25	1700000	1200000	7733031
Calvaliers	2929207.529	2200000	2700000	9813031
Nuggets	3238388.75	2306000	2200,000 & 10290000	

Looking at the mean, or average of the table above, it obviously supports the claim that the average salary for an NBA player was $3,241,895. Not one of these three teams met that average, and the only reason the Nuggets came close is because the have one less player on the team than the Hornets or the Calvaliers.

The Median showed that all three teams fell below the average. The lowest paid team, the Hornets, have only five people on their team that meet that average.

The mode fell below the average also. This supports my claim, but I do not agree that the mode is accurate in findi the average. This is because there is suc a wide range of salarys.

The range tells us that there must be some very high paid players, and some very low paid players. This also is not valad in finding the average player salary.

It finaly comes down to the fact thr my statistics show, the average salary for an NBA player of $3,241,895 is not

Concepts and Problem Solving: Teams randomly selected.

Representation: Data organized in a table and referenced in text.

Problem Solving and Concepts: There are 2 modes for the Nuggets not 1.

Problem Solving and Concepts: Faulty reasoning.

Problem Solving and Concepts: Accurate interpretation of the meaning of the median, mode, and range.

Mathematics Assessment Activity # 12: Jumping to Conclusions
Anchor #: JC2-002

Problem Solving and Concepts: Conducted an additional analysis to evaluate the claim and then to refute the claim that most NBA basketball players do not earn $3,241,895.

accurate.

My calculations show that the Cavaliers only have 29% of player that make $3,241,895, and the Nuggets and Hornets only have 29% also. That is a very low percent for all three teams. If that is the average, there should be a much higher percent for at least one of the teams.

In conclution I refute the claim that most NBA players earn $3,241,895 in the year 2000. All of my different calculations have proven that that claim is invalaad.

Calculation: 37% of the Nuggets and 31% of the Hornets have salaries greater than the average.

Mathematics Assessment Activity #12: Jumping to Conclusions
Anchor #: JC2-002

Calculation: The mean is calculated on the total provided, not the sum of the salaries.

JC2-002

Denver Nuggets Total: $51,814,220
Antonio McDyess $10,800,000
Nick Van Exel $9,300,000
Tariq Abdul-Wahad $4,500,000
Robert Pack $4,320,000
Voshon Lenard $3,780,000
Tracy Murray $3,060,000
Raef LaFrentz $2,970,840
Mark Strickland $2,400,000
Calbert Cheaney $2,200,000
George McCloud $2,200,000
Cory Alexander $2,180,000
Keon Clark $1,378,400
James Posey $1,047,600
Terry Davis $923,500
Mamadou N'diaye $737,880
Ryan Bowen $550,000

mean $3,238,388.75 OR
median - 2300000 OR
mode - 2,200,000 OR
range 10,2900000 OR

JC2-002

Charlotte Hornets Total: $46,441,556
Elden Campbell $8,050,000
Derrick Coleman $8,000,000
Jamal Mashburn $6,200,000
P.J. Brown $5,740,000
Bobby Phills $4,640,000
Baron Davis $2,916,000
David Wesley $2,880,000
Otis Thorpe $2,200,000
Eldridge Recasner $1,200,000
Matt Harpring $1,200,000
Jamal Magloire $975,000
Tim James $783,120
Eddie Robinson $600,000
Rodney Buford $423,500
Terrance Roberson $316,969
Lee Nailon $316,969

mean $2,902,597.25 OR
median - 1700000 OR
mode - 1,200,000 ✓
range - 7733031 OR

JC2-002

Cleveland Cavaliers Total: $49,780,548
Zydrunas Ilgauskas $10,130,000
Wesley Person $5,600,000
Chris Gatling $5,550,000
Brevin Knight $4,250,000
Lamond Murray $3,380,000
Cedric Henderson $2,700,000
Bimbo Coles $2,250,000
Robert Traylor $2,203,080
Mark Bryant $2,200,000
J.R. Reid $2,200,000
Clarence Weatherspoon $2,100,000
Chris Mihm $1,923,600
Andre Miller $1,808,400
Matt Harpring $1,244,880
Trajan Langdon $1,500,120
Michael Hawkins $423,500
Gary Grant $316,969

5/17
5/16
5/16

mean $2,978,267.529 OR
median = 2,200,000 OR
mode - 2,200,000 OR
range - 9813031 OR

Calculation: There are 2 modes, not 1.

35.6 × 2 = 71.2
35.6 × 3 = 106.8
35.6 × 5 = 178.3

100.10 − 71.2 = 28.8

35.6 × 2 = 71.2
100 − 71.2 = 28.8

10 ÷ 35.6 = 3.56
−30
56
−50
60

6A

Mathematics Assessment Activity # 12: Jumping to Conclusions

Anchor: # JC2-008

Criterion: Concepts and Problem Solving **Level: 2**

Although the student uses the data to support the claim and explanations show a definitional understanding of mean, median, mode and range, this is a level 2 response because some of the interpretations of the application of the mean, median, mode (The mode was 316,969… which showed me that the average could not be over 4 million.) are inaccurate and there is a major conceptual flaw. The student uses the average of the average to make the justification.

Criterion: Representation - Tables, graphs, models, or diagrams **Level: 3**

This is a level 3 response because data is organized into a table with accurate labels.

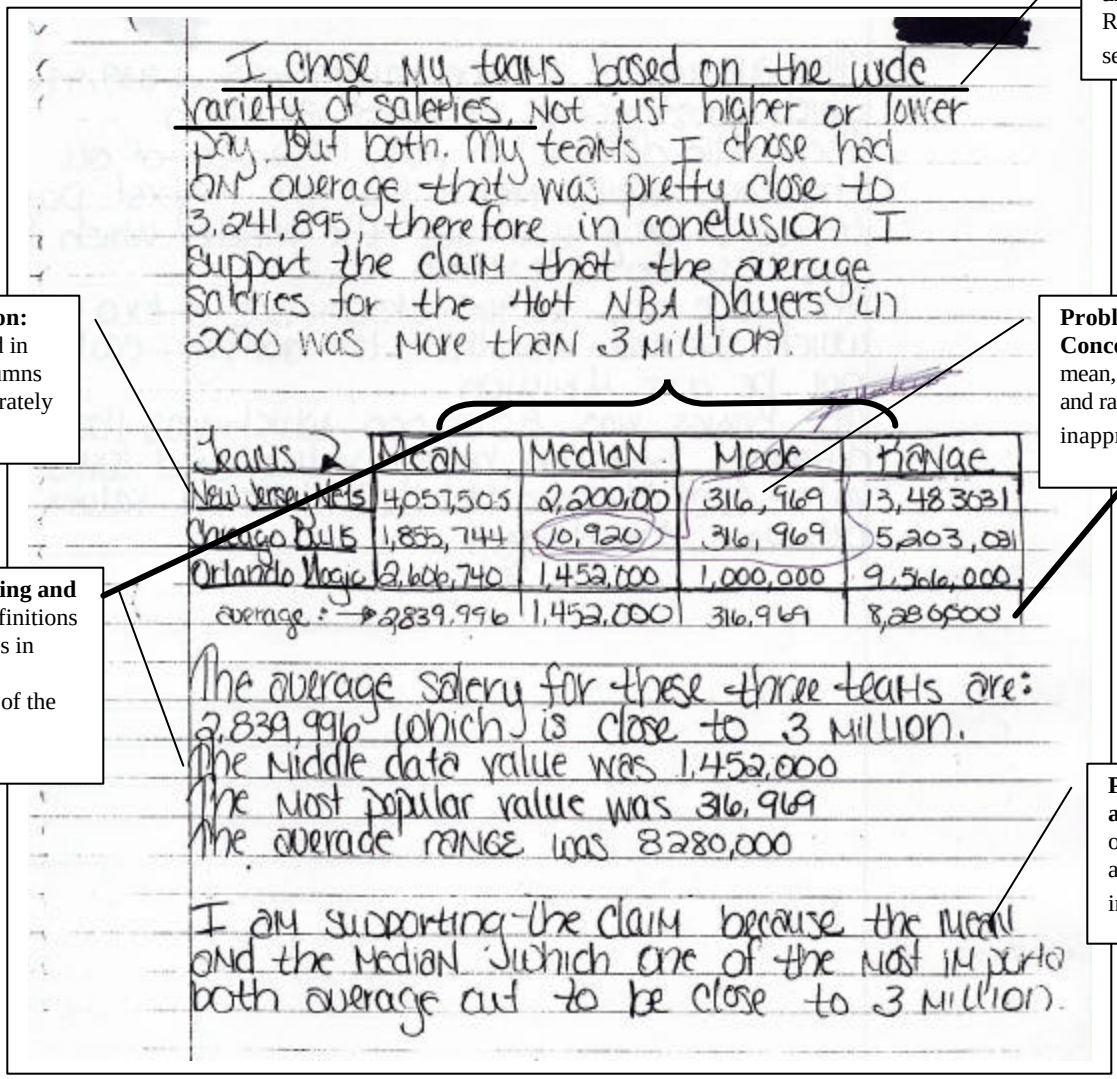
Criterion: Calculation **Level: 2**

Although the means and range were accurately calculated, this is a level 2 response because the median was not calculated accurately for any of the teams.

Criterion: Communication **Level: 3**

This is a level 3 response because mathematical vocabulary (mean, median, mode, range) is accurately and appropriately used and conventions do not get in the way of understanding the solution.

Mathematics Assessment Activity # 12: Jumping to Conclusions
Anchor #: JC2-008



I chose My teams based on the wide variety of salaries, Not just higher or lower pay. But both. My teams I chose had an average that was pretty close to 3,241,895, therefore in conclusion I support the claim that the average salaries for the 464 NBA players in 2000 was More than 3 million.

Teams	Mean	Median	Mode	Range
New Jersey Nets	4,057,505	2,200,00	316,969	13,483031
Chicago Bulls	1,855,744	10,920	316,969	5,203,081
Orlando Magic	2,606,740	1,452,000	1,000,000	9,506,000
average:	2839,996	1,452,000	316,969	8,280,500

The average salery for these three teams are: 2,839,996 (which) is close to 3 million.
The Middle data value was 1,452,000
The Most popular value was 316,969
The averade range was 8280,000

I am supporting the claim because the Mean and the Median (which one of the Most important both average out to be close to 3 million).

Problem Solving and Concepts: Range of salaries selected.

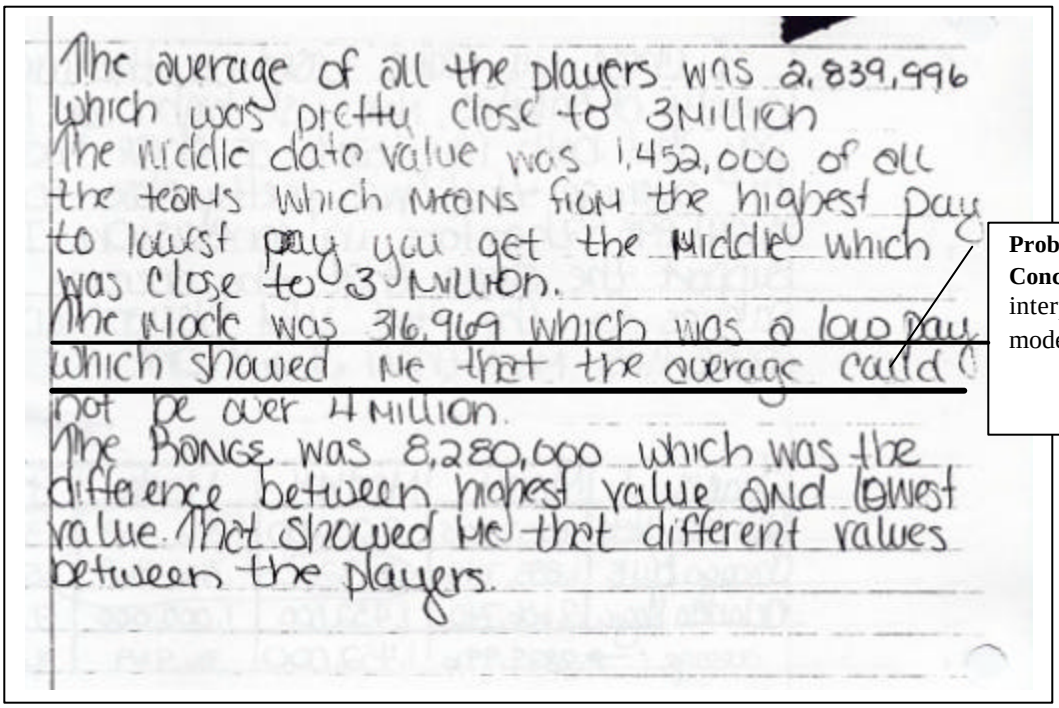
Representation: Data organized in table with columns and rows accurately labeled.

Problem Solving and Concepts: Average of mean, median, mode and range inappropriate.

Problem Solving and Concepts: Definitions linked to values in tables show understanding of the terms.

Problem Solving and Concepts: Use of average of average inappropriate.

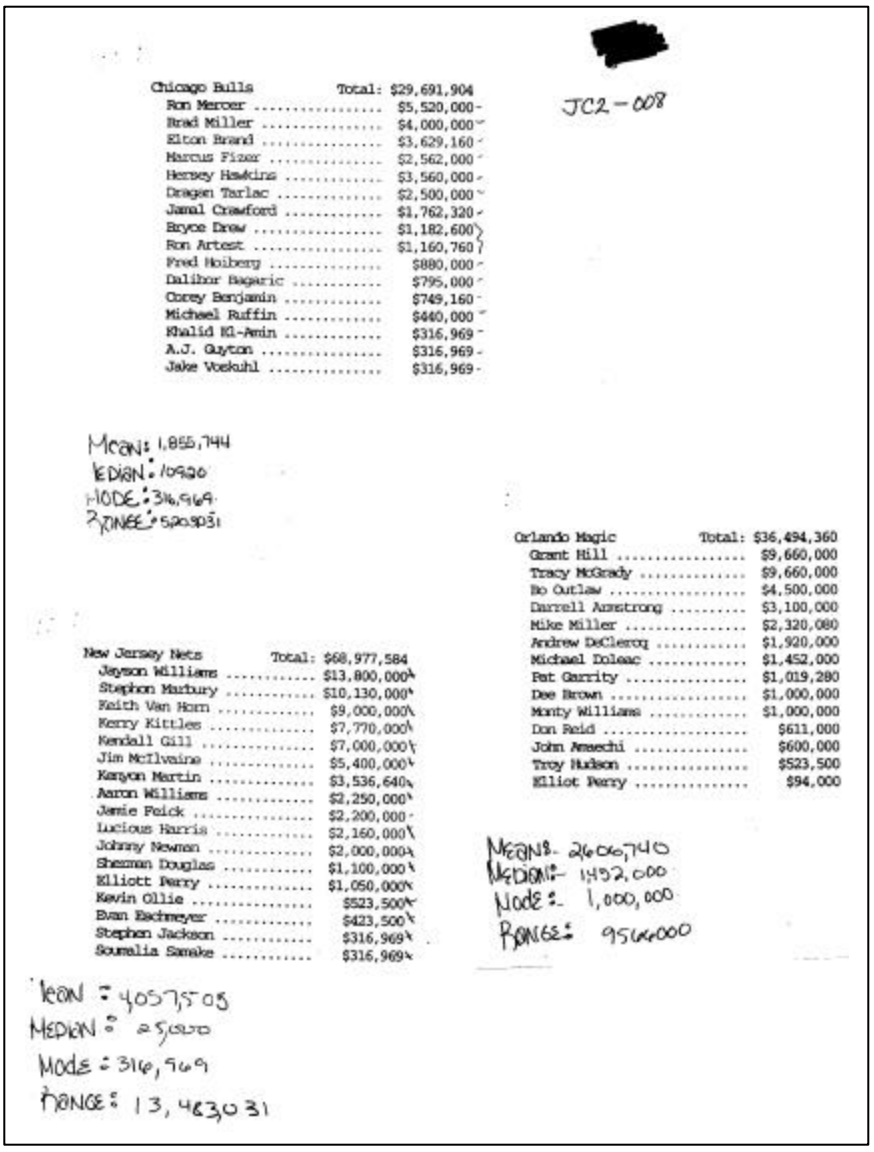
Mathematics Assessment Activity # 12: Jumping to Conclusions
Anchor #: JC2-008



The average of all the players was 2,839,996 which was pretty close to 3 MILLION The middle data value was 1,452,000 of all the teams which MEANS from the highest pay to lowest pay you get the middle which was close to 3 MILLION. The mode was 316,969 which was a low pay which showed ME that the average could not be over 4 MILLION. The RANGE was 8,280,000 which was the difference between highest value AND lowest value. That showed ME that different values between the players.

Problem Solving and Concepts: Inaccurate interpretation of the mode.

Mathematics Assessment Activity # 12: Jumping to Conclusions
Anchor Paper # JC2-008



[redacted]

JC2 – 008

Chicago Bulls Total: $29,691,904
Ron Mercer $5,520,000
Brad Miller $4,000,000
Elton Brand $3,629,160
Marcus Fizer $2,562,000
Hersey Hawkins $3,560,000
Dragen Tarlac $2,500,000
Jamal Crawford $1,762,320
Bryce Drew $1,182,600
Ron Artest $1,160,760
Fred Hoiberg $880,000
Dalibor Bagaric $795,000
Corey Benjamin $749,160
Michael Ruffin $440,000
Khalid El-Amin $316,969
A.J. Guyton $316,969
Jake Voskuhl $316,969

MEAN: 1,855,744
MEDIAN: 709,20
MODE: 316,969
RANGE: 5,203,031

Orlando Magic Total: $36,494,360
Grant Hill $9,660,000
Tracy McGrady $9,660,000
Bo Outlaw $4,500,000
Darrell Armstrong $3,100,000
Mike Miller $2,320,080
Andrew DeClercq $1,920,000
Michael Doleac $1,452,000
Pat Garrity $1,019,280
Dee Brown $1,000,000
Monty Williams $1,000,000
Don Reid $611,000
John Amaechi $600,000
Troy Hudson $523,500
Elliot Perry $94,000

New Jersey Nets Total: $68,977,584
Jayson Williams $13,800,000
Stephon Marbury $10,130,000
Keith Van Horn $9,000,000
Kerry Kittles $7,770,000
Kendall Gill $7,000,000
Jim McIlvaine $5,400,000
Kenyon Martin $3,536,640
Aaron Williams $2,250,000
Jamie Feick $2,200,000
Lucious Harris $2,160,000
Johnny Newman $2,000,000
Sherman Douglas $1,100,000
Elliott Perry $1,050,000
Kevin Ollie $523,500
Evan Eschmeyer $423,500
Stephen Jackson $316,969
Soumalia Samake $316,969

MEAN: 26,006,740
MEDIAN: 1,452,000
MODE: 1,000,000
RANGE: 9,566,000

MEAN = 4,057,505
MEDIAN = 2,360
MODE = 316,969
RANGE = 13,463,031

Mathematics Assessment Activity # 12: Jumping to Conclusions

Anchor #: JC2-005

Problem Solving and Concepts **Level: 2**

Although the meanings of the mean, median, and range are exemplified ("median – person in the middle", and "range shows how much more the best player makes than the worst"), *this is a level 2 response because* a mathematical rationale on how the measures support or refute the claim is not present, the use of rounded averages is inappropriate, and the use of the mean alone to support or refute the claim is inappropriate given the data. In addition, there are two modes for the Hornets.

Representation **Level: 3**

This is a Level 3 response because the table is organized and rows and columns accurately labeled.

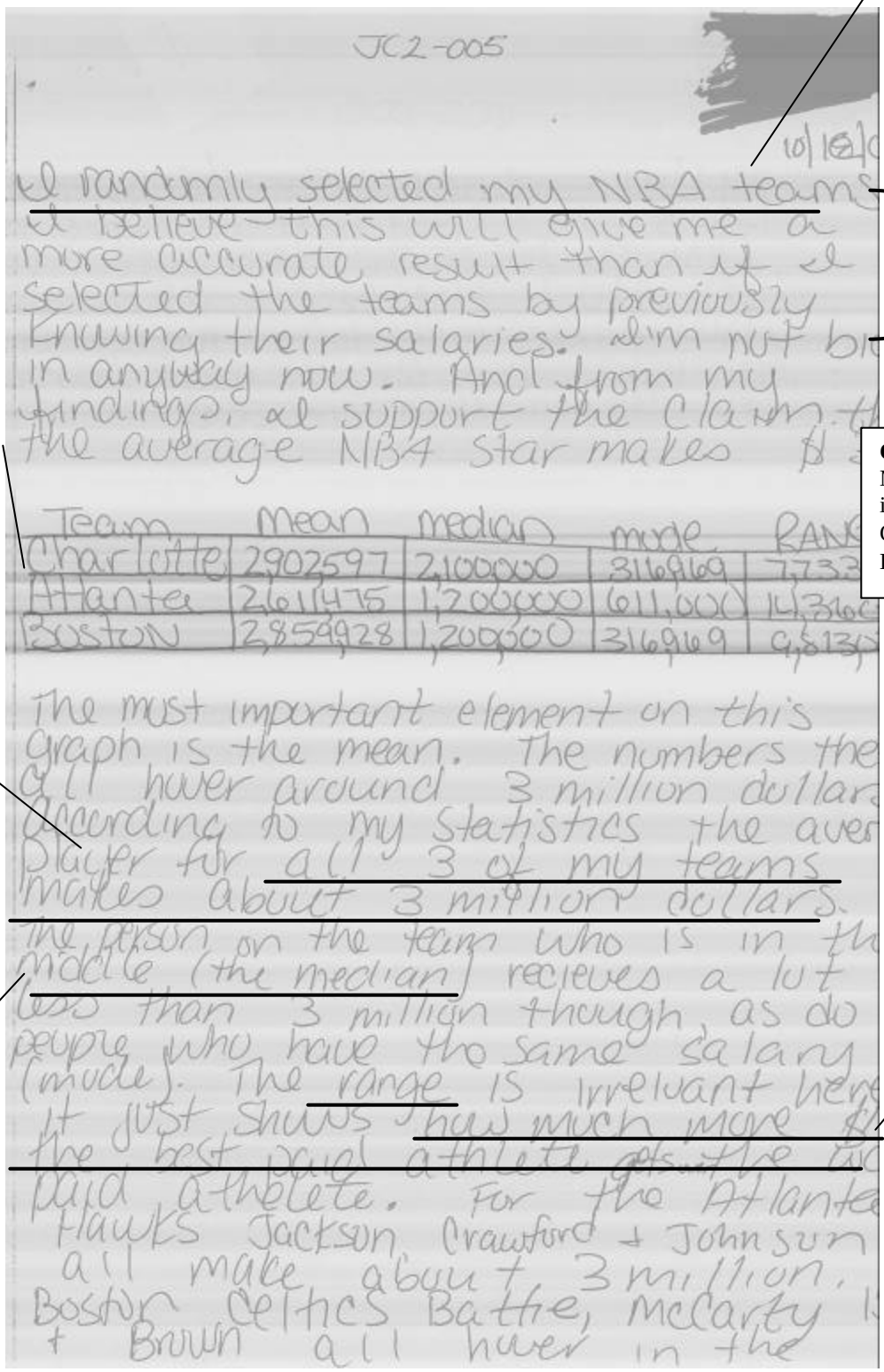
Calculation **Level: 2**

Although the mean for the Charlotte Hornets and the Boston Celtics are accurate, this is a Level 2 response because the two medians (Charlotte and Boston) that required finding the average between the two middle numbers were not accurately determined

Communication **Level: 3**

This is a Level 3 response because the terms bias, mean, median, and range are used appropriately and conventions do not get in the way of understanding elements of the response.

Mathematics Assessment Activity # 12: Jumping to Conclusions
Anchor #: JC2-005



JC2-005

10/16/0

I randomly selected my NBA teams
I believe this will give me a more accurate result than if I selected the teams by previously knowing their salaries. I'm not bi in anyway now. And from my findings, I support the claim th the average NBA star makes $

Team	mean	median	mode	RANK
Charlotte	2902597	2,100000	3169169	7,733
Atlanta	2,611475	1,200000	611,000	14,316
Boston	2,859928	1,200000	3169169	9,813

The most important element on this graph is the mean. The numbers the all hover around 3 million dollars According to my statistics the aver player for all 3 of my teams makes about 3 million dollars. The person on the team who is in th middle (the median) recieves a lot less than 3 million though, as do people who have the same salary (mode). The range is irrelvant here it just shows how much more $ the best paid athlete gets the lea paid athlete. For the Atlanta Hawks Jackson, Crawford & Johnson all make about 3 million. Boston Celtics Battie, McCarty & Brown all hover in the

Problem Solving and Concepts: Teams randomly selected with a discussion about bias.

Representation: Data organized in table with columns and rows accurately labeled.

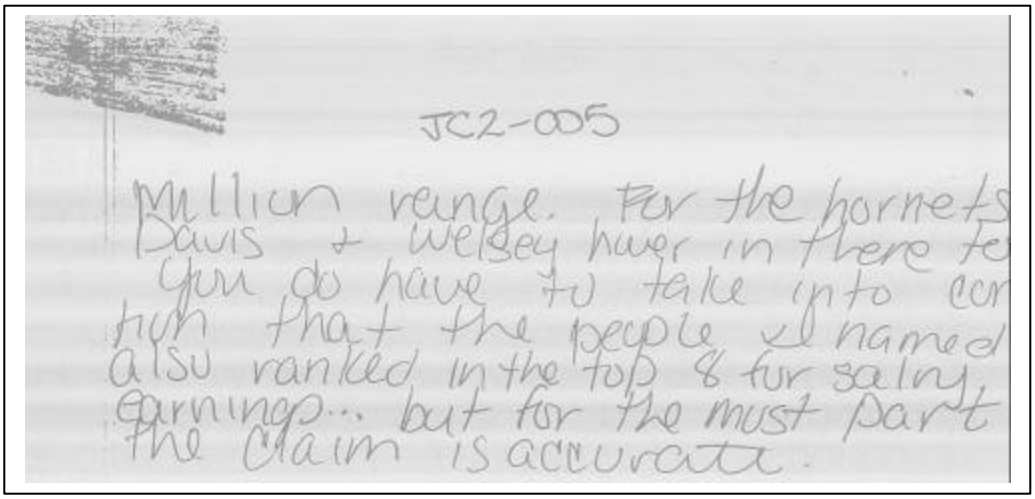
Calculation: Median incorrect for Charlotte and Boston.

Problem Solving and Concepts: Use of rounded average.

Problem Solving and Concepts: Definition of median accurate.

Problem Solving and Concepts: Definition of range accurate.

Mathematics Assessment Activity # 12: Jumping to Conclusions
Anchor Paper # JC2-005


JC2-005

million range. For the hornets Davis + Welsey have in there fe you do have to take into con tion that the people I named also ranked in the top 8 for salry earnings... but for the most part the claim is accurate.

Mathematics Assessment Activity # 12: Jumping to Conclusions

Anchor Paper # JC2-005

JC2-005

Atlanta Hawks	Total: $39,172,128
Dikembe Mutombo	$14,400,000
Alan Henderson	$5,910,000
Lorenzen Wright	$4,950,000
Jim Jackson	$2,330,000
Chris Crawford	$2,200,000
DerMarr Johnson	$2,107,200
Jason Terry	$1,579,080
Anthony Johnson	$1,200,000
Cal Bowdler	$1,102,800
Roshown McLeod	$978,600
Dion Glover	$960,480
Larry Robinson	$611,000
Matt Maloney	$611,000
Hanno Mottola	$316,969
Anthony Miller	$40,000

1,200000
2611475.2
14 360 000
611,000

Charlotte Hornets	Total: $46,441,556
Elden Campbell	$8,050,000
Derrick Coleman	$8,000,000
Jamal Mashburn	$6,200,000
P.J. Brown	$5,740,000
Bobby Phills	$4,640,000
Baron Davis	$2,916,000
David Wesley	$2,880,000
Otis Thorpe	$2,200,000
Eldridge Recasner	$1,200,000
Hersey Hawkins	$1,200,000
Jamaal Magloire	$975,000
Tim James	$783,120
Eddie Robinson	$600,000
Rodney Buford	$423,500
Terrance Roberson	$316,969
Lee Nailon	$316,969

Boston Celtics	Total: $51,478,704
Antoine Walker	$10,130,000
Kenny Anderson	$7,520,000
Bryant Stith	$5,920,000
Vitaly Potapenko	$4,290,000
Eric Williams	$3,890,000
Greg Minor	$3,240,000
Tony Battie	$3,200,000
Walter McCarty	$2,670,000
Randy Brown	$2,250,000
John Williams	$2,100,000
Paul Pierce	$1,608,840
Jerome Moiso	$1,461,960
Chris Carr	$1,200,000
Doug Overton	$548,500
Adrian Griffin	$498,500
Mark Blount	$316,969
Chris Herren	$316,969
Milt Palacio	$316,969

Mathematics Assessment Activity # 12: Jumping to Conclusions

Anchor #: JC2-046

Problem Solving and Concepts **Level: 1**

Although there is a justification for the selection of each team (One team was selected because it had the lowest total, one for the highest and one in the middle), *this is a Level 1 response because* the solution does not provide a mathematical rationale on how each measure of central tendency helps evaluate the claim and the decision to support or refute the claim is made by team, not across the three teams or using other data across all the teams.

Representation **Level: 1**

This is a Level 1 response because the mean, median, mode and range of each team are listed separately, not organized into a table.

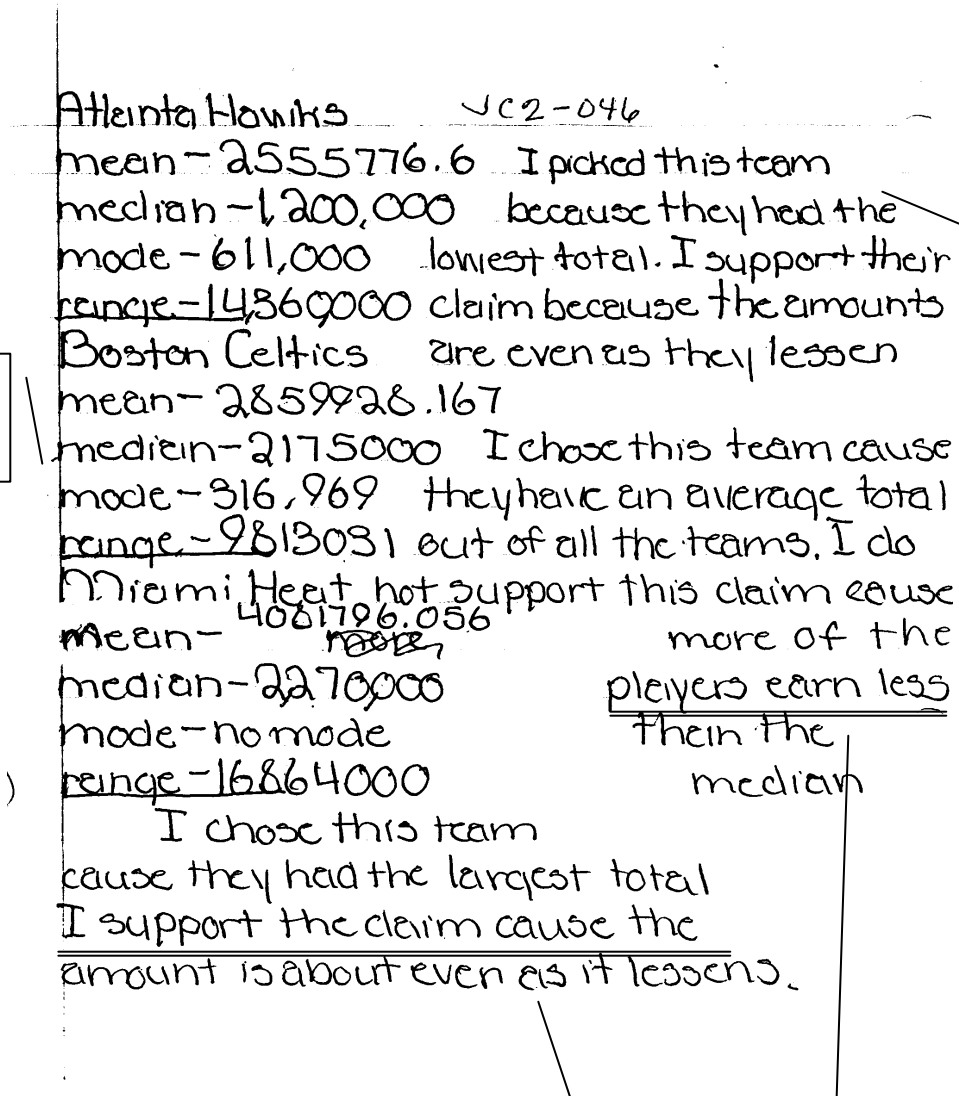
Calculation **Level: 3**

This is a Level 3 response because the mean, median, mode and range are accurately calculated with the exception of the mean for the Atlanta Hawks.

Communication **Level: 2**

Although median is used to refute the claim based upon the Boston Celtics, **t**his is a Level 2 response because all other explanations use common terms ("…amounts are even as they lessen."), not appropriate math vocabulary.

Mathematics Assessment Activity # 12: Jumping to Conclusions
Anchor #: JC2-046



Atlanta Hawks JC2-046
mean - 2555776.6 I picked this team
median - 1,200,000 because they had the
mode - 611,000 lowest total. I support their
range - 14360000 claim because the amounts
Boston Celtics are even as they lessen
mean - 2859928.167
median - 2175000 I chose this team cause
mode - 316,969 they have an average total
range - 9813031 out of all the teams. I do
Miami Heat not support this claim cause
mean - 4081796.056 more of the
median - 2270000 players earn less
mode - no mode than the
range - 16864000 median
I chose this team
cause they had the largest total
I support the claim cause the
amount is about even as it lessens.

Representation: Data not organized in table.

Problem Solving and Concepts: Justification for selecting the teams can help evaluate the claim – lowest total, highest total, and average.

Problem Solving and Concepts: Claims supported or refuted by team, not across teams.

Communication: Median used inappropriately. Other explanations supported with common terms that are difficult to understand.

2000-2001 NBA Salaries
Patricia Basketball Stuff - http://www.nationwide.net/~patricia/

Atlanta Hawks
- Dikembe Mutombo $14,400,000
- Alan Henderson $5,910,000
- Lorenzen Wright $4,950,000
- Jim Jackson $2,330,000
- Chris Crawford $2,200,000
- DerMarr Johnson $2,107,200
- Jason Terry $1,579,080
- Anthony Johnson $1,200,000
- Cal Bowdler $1,102,800
- Roshown McLeod $978,600
- Dion Glover $960,480
- Larry Robinson $611,000
- Matt Maloney $611,000
- Hanno Mottola $316,969
- Anthony Miller ..... $40,000 [

Boston Celtics
- Antoine Walker $10,130,000
- Kenny Anderson $7,520,000
- Bryant Stith $5,920,000
- Vitaly Potapenko $4,290,000
- Eric Williams $3,890,000
- Greg Minor ..... $3,240,000 [released]
- Tony Battie $3,200,000
- Walter McCarty $2,670,000
- Randy Brown $2,250,000
- John Williams ..... $2,100,000 [released]
- Paul Pierce $1,608,840
- Jerome Moiso $1,461,960
- Chris Carr $1,200,000
- Doug Overton ..... $548,500 [released]
- Adrian Griffin $498,500
- Mark Blount $316,969
- Chris Herren $316,969
- Milt Palacio $316,969

Charlotte Hornets
- Elden Campbell $8,050,000
- Derrick Coleman $8,000,000
- Jamal Mashburn $6,200,000
- P.J. Brown $5,740,000
- Bobby Phills ..... $4,640,000 [deceased]
- Baron Davis $2,916,000
- David Wesley $2,880,000
- Otis Thorpe $2,200,000
- Eldridge Recasner $1,200,000
- Hersey Hawkins $1,200,000

Jamaal Magloire $975,000
Tim James $783,120
Eddie Robinson $600,000
Rodney Buford ..... $423,500 [released]
Terrance Roberson $316,969
Lee Nailon $316,969

Chicago Bulls
Ron Mercer $5,520,000
Brad Miller $4,000,000
Elton Brand $3,629,160
Marcus Fizer $2,562,000
Hersey Hawkins ..... $3,560,000 [released]
Dragan Tarlac $2,500,000
Jamal Crawford $1,762,320
Bryce Drew $1,182,600
Ron Artest $1,160,760
Fred Hoiberg $880,000
Dalibor Bagaric $795,000
Corey Benjamin $749,160
Michael Ruffin $440,000
Khalid El-Amin $316,969
A.J. Guyton $316,969
Jake Voskuhl $316,969

Cleveland Cavaliers
Zydrunas Ilgauskas $10,130,000
Wesley Person $5,600,000
Chris Gatling $5,550,000
Brevin Knight $4,250,000
Lamond Murray $3,380,000
Cedric Henderson $2,700,000
Bimbo Coles $2,250,000
Robert Traylor $2,203,080
Mark Bryant ..... $2,200,000 [released]
J.R. Reid $2,200,000
Clarence Weatherspoon $2,100,000
Chris Mihm $1,923,600
Andre Miller $1,808,400
Matt Harpring $1,244,880
Trajan Langdon $1,500,120
Michael Hawkins $423,500
Gary Grant ..... $316,969 [released]

Dallas Mavericks
Michael Finley $8,400,000
Shawn Bradley $8,370,000
Christian Laettner $6,625,000
Steve Nash $5,500,000
Loy Vaught ..... $4,812,025 [$4,530,000 + $282,025 trade kicker]
Howard Eisley $4,250,000
Gary Trent $2,400,000
Hubert Davis $2,100,000
Dirk Nowitzki $1,693,560
Terry Mills ..... $1,400,000 [released]
Etan Thomas $1,388,880

Courtney Alexander $1,319,400
Greg Buckner $1,100,000
Donnell Harvey $862,560
Mark Bryant ..... $829,268 [cap amount: $460,000 (prorated)]
Leon Smith ..... $483,680 [released]
Bill Curley ..... $423,500 [released]
Eduardo Najera $316,969

Denver Nuggets
Antonio McDyess $10,800,000
Nick Van Exel $9,200,000
Tariq Abdul-Wahad $4,500,000
Robert Pack $4,320,000
Voshon Lenard $3,780,000
Tracy Murray $3,060,000
Raef LaFrentz $2,970,840
Mark Strickland $2,400,000
Calbert Cheaney $2,200,000
George McCloud $2,200,000
Cory Alexander ..... $2,160,000 [released]
Keon Clark $1,379,400
James Posey $1,047,600
Terry Davis ..... $923,500 [cap amount: $548,500]
Mamadou N'diaye $737,880
Ryan Bowen $510,000

Detroit Pistons
Jerry Stackhouse $5,310,000
Ben Wallace $4,000,000
Dana Barros $3,700,000
Jud Buechler $3,260,000
Chucky Atkins $3,000,000
Jerome Williams $2,870,000
Mikki Moore $2,850,000
Joe Smith $2,250,000
Eric Montross $2,240,000
Michael Curry $2,200,000
John Wallace $2,200,000
Billy Owens $2,100,000
Eric Murdock ..... $2,100,000 [released]
Mateen Cleaves $1,253,400
Ansu Sesay ..... $508,000 [released]
Torraye Braggs ..... $316,969 [released]
Brian Cardinal $316,969

Golden State Warriors Total:
Erick Dampier $5,610,000
Mookie Blaylock $4,800,000
Chris Mills $4,800,000
Bob Sura $4,390,000
Danny Fortson $3,950,000
Adonal Foyle $3,580,000
Adam Keefe $3,390,000
Antawn Jamison $2,678,400
Terry Cummings ..... $2,200,000 [retired]
Vinny Del Negro $2,100,000

Larry Hughes $1,842,480
Chris Mullin ..... $1,000,000 [cap amount: $548,500]
Vonteego Cummings $757,200
Bill Curley ..... $611,000 [cap amount: $548,500]
Chris Porter $316,969
Marc Jackson $316,969
Randy Livingston ..... $20,000 [released]

Houston Rockets
Hakeem Olajuwon $16,700,000
Kelvin Cato $5,330,000
Walt Williams $4,250,000
Cuttino Mobley $3,920,000
Steve Francis $3,246,960
Don McLean ..... $2,380,000 [released]
Maurice Taylor $2,250,000
Shandon Anderson $2,200,000
Carlos Rogers $2,200,000
Matt Bullard $2,100,000
Jason Collier $1,190,760
Matt Maloney ..... $1,790,000 [released]
Kenny Thomas $885,120
Moochie Norris $523,500
Dan Langhi $316,969

Indiana Pacers
Reggie Miller $10,670,000
Jalen Rose $9,660,000
Jermaine O'Neal $5,710,000
Derrick McKey $5,400,000
Austin Croshere $5,300,000
Chris Mullin ..... $3,650,000 [released]
Travis Best $3,500,000
Jonathan Bender $2,380,680
Sam Perkins $2,250,000
Zan Tabak $1,200,000
Joe Kleine ..... $1,200,000 [released]
Terry Mills ..... $1,000,000 [cap amount: $548,500]
Jeff Foster $922,080
Al Harrington $797,880
Tyus Edney $523,500
Bruno Sundov $498,500
Lari Ketner $423,500

Los Angeles Clippers
Michael Olowokandi $3,697,440
Derek Strong $3,510,000
Darius Miles $2,841,720
Lamar Odom $2,628,960
Eric Piatkowski $2,200,000
Sean Rooks $2,160,000
Cherokee Parks $2,100,000
Keith Closs ..... $1,920,000 [suspended]
James Robinson ..... $1,870,000 [released]
Keyon Dooling $1,538,880
Corey Maggette $1,353,960

Quentin Richardson $1,020,960
Brian Skinner $901,800
Jeff McInnis $523,500
Etdrick Bohannon ..... $523,500 [released]
Zendon Hamilton $316,969
Earl Boykins $498,500

Los Angeles Lakers
Shaquille O'Neal $19,285,715
Kobe Bryant $10,130,000
Horace Grant $6,500,000
Robert Horry $4,800,000
Rick Fox $3,400,000
Derek Fisher $3,380,000
Brian Shaw $2,250,000
Ron Harper $2,200,000
Greg Foster $1,760,000
Chuck Person ..... $1,200,000 [released]
Tyronn Lue $865,800
Devean George $849,720
Isaiah Rider ..... $736,000 [cap amount: $548,500]
Mark Madsen $707,040
Mike Penberthy $316,969
Stanislav Medvedenko $316,969
Sam Jacobson ..... $270,000 [released]

Miami Heat
Alonzo Mourning $16,880,000
Tim Hardaway $12,000,000
Eddie Jones $8,960,000
Brian Grant $8,900,000
Anthony Mason $5,550,000
Dan Majerle $4,050,000
Duane Causwell $4,000,000
Cedric Ceballos $3,937,500
Dale Ellis ..... $2,290,000 [released]
A.C. Green $2,250,000
Anthony Carter $1,200,000
Ricky Davis $939,360
Don MacLean $798,500
Bruce Bowen $733,000
Todd Fuller ..... $611,000 [cap amount: $548,500]
Eddie House $316,969
Jamal Robinson ..... $40,000 [released]
Rick Brunson ..... $16,000 [released]

Milwaukee Bucks
Ray Allen $10,130,000
Tim Thomas $8,510,000
Glenn Robinson $8,120,000
Danny Manning ..... $6,830,000 [released]
Jason Caffey $4,380,000
Scott Williams $4,200,000
Sam Cassell $4,000,000
Ervin Johnson $2,700,000
Lindsey Hunter $2,650,000

Darvin Ham $1,700,000
Joel Przybilla $1,619,880
Jerome Kersey ..... $1,000,000 [cap amount: $548,500]
Mark Pope $498,500
Rafer Alston $423,500
Maceo Baston ..... $423,500 [released]
Jason Hart $316,969
Michael Redd $316,969

Minnesota Timberwolves Total:
Kevin Garnett $19,610,000
Terrell Brandon $8,330,000
Dean Garrett $2,880,000
Anthony Peeler $2,740,000
Sam Mitchell $2,370,000
Chauncey Billups $2,250,000
Wally Szczerbiak $2,162,280
William Avery $1,286,160
LaPhonso Ellis $1,200,000
Tom Hammonds $1,130,000
Radoslav Nesterovic $1,123,560
Todd Day ..... $736,000 [cap amount: $548,500]
Reggie Slater ..... $673,500 [cap amount: $548,500]
Andrae Patterson $498,500
Sam Jacobson $498,500

New Jersey Nets
Jayson Williams ..... $13,800,000 [retired]
Stephon Marbury $10,130,000
Keith Van Horn $9,000,000
Kerry Kittles $7,770,000
Kendall Gill $7,000,000
Jim McIlvaine $5,400,000
Kenyon Martin $3,536,640
Aaron Williams $2,250,000
Jamie Feick $2,200,000
Lucious Harris $2,160,000
Johnny Newman $2,000,000
Sherman Douglas $1,100,000
Elliott Perry ..... $1,050,000 [released]
Kevin Ollie $523,500
Evan Eschmeyer $423,500
Stephen Jackson $316,969
Soumalia Samake $316,969

New York Knicks
Larry Johnson $11,000,000
Latrell Sprewell $10,125,000
Allan Houston $9,000,000
Glen Rice $7,578,900
Marcus Camby $5,750,000
Luc Longley $5,750,000
Charlie Ward $5,040,000
Chris Childs $4,680,000
Kurt Thomas $3,680,000
Travis Knight $3,200,000

Erick Strickland $2,560,000
Vernon Maxwell ..... $1,570,000 [released]
Mirsad Turkcan ..... $1,069,400 [released]
Felton Spencer ..... $1,000,000 [cap amount: $548,500]
Rick Brunson $523,500
Lazero Borrell ..... $423,500 [released]
Jonathan Kerner ..... $423,500 [released]
Pete Mickeal $316,969
Lavor Postell $316,969

Orlando Magic
Grant Hill $9,660,000
Tracy McGrady $9,660,000
Bo Outlaw $4,500,000
Darrell Armstrong $3,100,000
Mike Miller $2,320,080
Andrew DeClercq $1,920,000
Michael Doleac $1,452,000
Pat Garrity $1,019,280
Dee Brown ..... $1,000,000 [cap amount: $548,500]
Monty Williams ..... $1,000,000 [cap amount: $548,500]
Don Reid ..... $611,000 [cap amount: $548,500]
John Amaechi $600,000
Troy Hudson $523,500
Elliot Perry ..... $94,000 [released]

Philadelphia 76ers
Allen Iverson $10,130,000
Theo Ratliff $7,800,000
Matt Geiger $7,515,840
Tyrone Hill $7,300,000
Toni Kukoc $6,000,000
Eric Snow $3,380,000
George Lynch $2,200,000
Aaron McKie $1,818,000
Vernon Maxwell ..... $1,000,000 [cap amount: $548,500]
Speedy Claxton $936,000
Nazr Mohammed $739,080
Jumaine Jones $735,600
Jermaine Jackson ..... $423,500 [released]
Todd MacCulloch $423,500
Ademola Okulaja $316,969
Pepe Sanchez $316,969
Mark Karcher ..... $50,000 [released]

Phoenix Suns
Anfernee Hardaway $10,130,000
Tom Gugliotta $9,360,000
Jason Kidd $7,680,000
Clifford Robinson $6,890,000
Chris Dudley $6,200,000
Rex Chapman ..... $3,500,000 [retired]
Tony Delk $2,250,000
Rodney Rogers $2,200,000
Shawn Marion $1,662,240
Corie Blount $1,320,000

Mario Elie ..... $1,000,000 [cap amount: $548,500]
Iakovos Tsakalidis $763,200
Ruben Garces $316,969
Paul McPherson $316,969
Daniel Santiago $316,969

Portland Trailblazers
Scottie Pippen $13,750,000
Rasheed Wallace $12,600,000
Shawn Kemp $11,720,000
Arvydas Sabonis $11,250,000
Damon Stoudamire $11,250,000
Steve Smith $8,100,000
Dale Davis $6,000,000
Greg Anthony $3,500,000
Will Perdue $2,250,000
Detlef Schrempf $2,200,000
Bonzi Wells $1,528,440
Gary Grant ..... $1,000,000 [cap amount: $548,500]
Stacey Augmon ..... $923,500 [cap amount: $548,500]
Erick Barkley $712,200
Antonio Harvey ..... $611,000 [cap amount: $548,500]

Sacramento Kings
Chris Webber $12,000,000
Vlade Divac $9,640,000
Scot Pollard $3,920,000
Nick Anderson $3,750,000
Doug Christie $3,140,000
Jon Barry $2,730,000
Lawrence Funderburke $2,700,000
Bobby Jackson $2,250,000
Jason Williams $2,011,080
Predrag Stojakovic $1,480,000
Hidayet Turkoglu $1,131,240
Darrick Martin ..... $673,500 [cap amount: $548,500]
Roy Rogers ..... $523,500 [released]
Jabari Smith $316,969

San Antonio Spurs
David Robinson $14,700,000
Tim Duncan $9,660,000
Avery Johnson $8,000,000
Sean Elliott $5,300,000
Samaki Walker $2,960,000
Antonio Daniels $2,820,000
Malik Rose $2,570,000
Derek Anderson $2,250,000
Terry Porter $2,200,000
Steve Kerr $2,200,000
Jaren Jackson $1,750,000
Danny Ferry $1,200,000
Shawnelle Scott $548,500
Derrick Dial $423,500
Ira Newble $316,969
Chris Carrawell ..... $316,969 [released]

Seattle Sonics
Patrick Ewing $14,000,000
Gary Payton $12,200,000
Vin Baker $10,130,000
Brent Barry $4,320,000
Rashard Lewis $3,920,000
Jelani McCoy $1,110,000
Desmond Mason $1,074,720
Pervis Ellison ..... $1,000,000 [cap amount: $548,500]
David Wingate ..... $1,000,000 [cap amount: $548,500]
Ruben Patterson $990,000
Emanual Davis $610,000
Shammond Williams $550,000
Olumide Oyedeji $316,969
Ruben Wolkowyski $316,969

Toronto Raptors
Charles Oakley $5,760,000
Antonio Davis $5,500,000
Corliss Williamson $3,940,000
Mark Jackson $3,570,000
Michael Stewart $3,520,000
Kevin Willis $2,870,000
Vince Carter $2,425,440
Alvin Williams $2,100,000
Dell Curry $2,000,000
Muggsy Bogues $1,740,000
Alek Radojevic $1,425,120
Tyrone Corbin ..... $1,000,000 [cap amount: $548,500]
Morris Peterson $898,560
Vladimir Stepania ..... $749,160 [released]
Kornel David $498,500
Garth Joseph $316,969

Utah Jazz
Karl Malone $15,750,000
John Stockton $11,000,000
Donyell Marshall $5,630,000
Greg Ostertag $5,200,000
Bryon Russell $4,570,000
John Starks $2,250,000
Olden Polynice $2,200,000
Jacque Vaughn $1,500,000
Danny Manning $1,200,000
Quincy Lewis $1,000,440
DeShawn Stevenson $828,120
John Crotty $800,000
David Benoit ..... $736,000 [cap amount: $548,500]
Scott Padgett $730,800
Bruno Sundov ..... $498,500 [released]

Vancouver Grizzlies
Shareef Abdur-Rahim $10,130,000
Bryant Reeves $10,110,000
Isaac Austin $5,500,000

Doug West $3,680,000
Mike Bibby $3,308,160
Stromile Swift $3,164,280
Brent Price $2,880,000
Othella Harrington $2,250,000
Grant Long $2,200,000
Tony Massenburg $1,360,000
Michael Dickerson $1,310,400
Kevin Edwards ..... $1,000,000 [cap amount: $548,500]
Mahmoud Abdul-Rauf ..... $798,500 [cap amount: $548,500]
Damon Jones $710,000
William Cunningham $498,500

Washington Wizards
Juwan Howard $16,875,000
Mitch Richmond $10,000,000
Rod Strickland $10,000,000
Jahidi White $3,922,000
Tyrone Nesby $2,990,000
Popeye Jones $2,812,500
Chris Whitney $2,370,000
Michael Smith $2,200,000
Richard Hamilton $1,973,880
Lorenzo Williams ..... $1,750,000 [released]
Dennis Scott ..... $1,200,000 [released]
Felipe Lopez $831,120
Laron Profit $508,000
Gerard King $489,500
Calvin Booth $423,500
Obinna Ekezie $423,500
Mike Smith $316,969