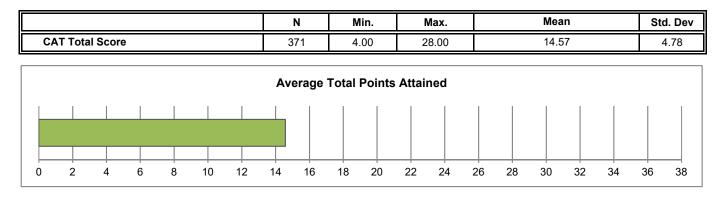
Sam Houston State University

CAT Institutional Report

Fall 2021 & Spring 2022 - ALL STUDENTS

CAT Overview: Descriptive Statistics for CAT Total Score Sam Houston State University: Fall 2021 & Spring 2022 - ALL STUDENTS



	Ν	Min.	Max.	Mean	Std. Dev
Time Spent (in minutes)	371	7	117	40	17

CAT Demographics: Descriptive Statistics for Sample

		Freq.	Freq. %
Gender	Male	139	38.5%
Gender	Female	222	61.5%
	Freshman	3	0.8%
Class	Sophomore	19	5.2%
Standing	Junior	97	26.6%
	Senior	246	67.4%
Class	Undergraduate	365	99.2%
Class	Graduate	3	0.8%
	≤ 20 years	80	22.1%
Age	21-25 years	246	68.0%
	≥ 26 years	36	9.9%

		Freq.	Freq. %
	Excellent	267	72.6%
Proficiency	Very Good	70	19.0%
with the English	Good	29	7.9%
Language*	Fair	2	0.5%
	Poor	0	0.0%

* Self-rated

		Freq.	Freq. %
	White	245	66.0%
	Black or African American	65	17.5%
Race**	American Indian or Alaska Native	7	1.9%
Race	Asian	23	6.2%
	Native Hawaiian or Other Pacific Islander	4	1.1%
	Other Race	18	4.9%

**The cumulative percent may exceed 100% as students are allowed to select more than one category.

	Freq.	Freq. %
Spanish/Hispanic/Latino Ethnicity	102	27.5%
Considered English primary language?	338	91.1%

CAT Breakdown: Frequency of Points Awarded for Each Question Sam Houston State University: Fall 2021 & Spring 2022 - ALL STUDENTS

	Sam Houston State University: Fall 2021 & Spring 2022 - ALL Skill Assessed by CAT Question	Points	Freq.	Institution
		Awarded 0	82	22.1%
Q1	Summarize the pattern of results in a graph without making inappropriate inferences.	1	289	77.9%
		0	134	36.1%
00	Evolute have strangely as malational type data supports a hypethasis	1	135	36.4%
Q2	Evaluate how strongly correlational-type data supports a hypothesis.	2	42	11.3%
		3	60	16.2%
		0	178	48.0%
Q3	Provide alternative explanations for a pattern of results that has many possible	1	105	28.3%
45	causes.	2	79	21.3%
		3	9	2.4%
		0	221	59.6%
		1	119	32.1%
Q4	Identify additional information needed to evaluate a hypothesis.	2	29	7.8%
		3	2	0.5%
		4	0	0.0%
Q5	Evaluate whether spurious information strongly supports a hypothesis.	0	107	28.8%
		1	264	71.2%
		0	57	15.4%
Q6	Provide alternative explanations for spurious associations.	1	107	28.8%
		2	164	44.2%
		3 0	43	11.6%
Q7	Identify additional information needed to evaluate a hypothesis.	1	324 46	87.3% 12.4%
Q	identify additional information needed to evaluate a hypothesis.	2	1	0.3%
		0	148	39.9%
Q8	Determine whether an invited inference is supported by specific information.	1	223	60.1%
		0	152	41.0%
Q9	Provide relevant alternative interpretations for a specific set of results.	1	209	56.3%
	' '	2	10	2.7%
		0	3	0.8%
		1	19	5.1%
Q10	Separate relevant from irrelevant information when solving a real-world problem.	2	66	17.8%
		3	145	39.1%
		4	138	37.2%
		0	115	31.0%
Q11	Use and apply relevant information to evaluate a problem.	1	230	62.0%
		2	26	7.0%
Q12	Use basic mathematical skills to help solve a real-world problem.	0	96	25.9%
		1	275	74.1%
		0	144	38.8%
Q13	Identify suitable solutions for a real-world problem using relevant information.	1	142	38.3%
		2	63	17.0%
		3	22	5.9%
		0	115 68	31.0%
	Identify and explain the best solution for a roal world problem using relevant	1 2	68 5	18.3% 1.3%
Q14	Identify and explain the best solution for a real-world problem using relevant information.	2 3	5 41	1.3%
		4	113	30.5%
		5	29	7.8%
		0	304	81.9%
		1	45	12.1%
Q15	Explain how changes in a real-world problem situation might affect the solution.	2	21	5.7%
		3	1	0.3%

					Institutional/Departmental Profile		
		•		San	n Houston State University: Fall 2021 & Spring 2022 - ALL STUDEN	ITS	
Evaluate and	Problem	Creative	Effective			Institution/	Department
Interpret Info	Solving	Thinking	Comm.		Skill Assessed by CAT Question	Mean	Avg. % of Attainable Points
х				Q1	Summarize the pattern of results in a graph without making inappropriate inferences.	0.78	78%
х			х	Q2	Evaluate how strongly correlational-type data supports a hypothesis.	1.08	36%
		х	х	Q3	Provide alternative explanations for a pattern of results that has many possible causes.	0.78	26%
	х	x	х	Q4	Identify additional information needed to evaluate a hypothesis.	0.49	12%
х				Q5	Evaluate whether spurious information strongly supports a hypothesis.	0.71	71%
		х	х	Q6	Provide alternative explanations for spurious associations.	1.52	51%
	х	х	х	Q7	Identify additional information needed to evaluate a hypothesis.	0.13	6%
х				Q8	Determine whether an invited inference is supported by specific information.	0.60	60%
		х	х	Q9	Provide relevant alternative interpretations for a specific set of results.	0.62	31%
х	х			Q10	Separate relevant from irrelevant information when solving a real-world problem.	3.07	77%
х	х		х	Q11	Use and apply relevant information to evaluate a problem.	0.76	38%
	х			Q12	Use basic mathematical skills to help solve a real-world problem.	0.74	74%
х	х			Q13	Identify suitable solutions for a real-world problem using relevant information.	0.90	30%
х	х		х	Q14	Identify and explain the best solution for a real-world problem using relevant information.	2.15	43%
	Х	х	х	Q15	Explain how changes in a real-world problem situation might affect the solution.	0.24	8%
					CAT Total Score	14.57	38%

The map of skills covered by each question above is a suggested theoretical guide for interpreting results.

					Freshman CAT Means Comparison Report				
				Sam	h Houston State University: Fall 2021 & Spring 2022 - ALL STU	DENTS			
Evaluate and	Problem	Creative	Effective			Institution		National	
Interpret Info	Solving	Thinking	Comm.		Skill Assessed by CAT Question	Mean	Mean	Probability of difference ^a	Effect Size ^b
х				Q1	Summarize the pattern of results in a graph without making inappropriate inferences.	0.78	0.62	***	+.35
х			х	Q2	Evaluate how strongly correlational-type data supports a hypothesis.	1.08	0.96	*	+.11
		х	х	Q3	Provide alternative explanations for a pattern of results that has many possible causes.	0.78	0.91	*	14
	х	х	х	Q4	Identify additional information needed to evaluate a hypothesis.	0.49	0.91	***	47
х				Q5	Evaluate whether spurious information strongly supports a hypothesis.	0.71	0.64	**	+.16
		х	х	Q6	Provide alternative explanations for spurious associations.	1.52	1.33	***	+.21
	х	х	х	Q7	Identify additional information needed to evaluate a hypothesis.	0.13	0.47	***	70
х				Q8	Determine whether an invited inference is supported by specific information.	0.60	0.54	*	+.12
		х	х	Q9	Provide relevant alternative interpretations for a specific set of results.	0.62	0.71	*	14
х	х			Q10	Separate relevant from irrelevant information when solving a real-world problem.	3.07	3.12		
х	х		х	Q11	Use and apply relevant information to evaluate a problem.	0.76	0.91	***	23
	х			Q12	Use basic mathematical skills to help solve a real-world problem.	0.74	0.77		
х	х			Q13	Identify suitable solutions for a real-world problem using relevant information.	0.90	0.92		
х	х		х	Q14	Identify and explain the best solution for a real-world problem using relevant information.	2.15	2.04		
	х	х	х	Q15	Explain how changes in a real-world problem situation might affect the solution.	0.24	0.71	***	62
					CAT Total Score	14.57	15.55	**	18

^a. * p<.05 **p<.01 ***p<.001 (2 -tailed) Does not Account for entering ACT/SAT.

^b. Mean difference divided by pooled group standard deviation (0.1 - 0.3 = small effect; 0.3 - 0.5 = moderate effect; >0.5 = large effect)

					Senior CAT Means Comparison Report				
				Sam	h Houston State University: Fall 2021 & Spring 2022 - ALL STU	DENTS			
Evaluate and	Problem	Creative	Effective			Institution		National ^a	
Interpret Info	Solving	Thinking	Comm.		Skill Assessed by CAT Question	Mean	Mean	Probability of difference ^b	Effect Size ^c
х				Q1	Summarize the pattern of results in a graph without making inappropriate inferences.	0.78	0.70	***	+.18
х			х	Q2	Evaluate how strongly correlational-type data supports a hypothesis.	1.08	1.20	*	11
		х	х	Q3	Provide alternative explanations for a pattern of results that has many possible causes.	0.78	1.15	***	38
	х	х	х	Q4	Identify additional information needed to evaluate a hypothesis.	0.49	1.10	***	64
х				Q5	Evaluate whether spurious information strongly supports a hypothesis.	0.71	0.75		
		х	х	Q6	Provide alternative explanations for spurious associations.	1.52	1.53		
	х	х	х	Q7	Identify additional information needed to evaluate a hypothesis.	0.13	0.56	***	84
х				Q8	Determine whether an invited inference is supported by specific information.	0.60	0.66	*	13
		х	х	Q9	Provide relevant alternative interpretations for a specific set of results.	0.62	0.85	***	36
х	х			Q10	Separate relevant from irrelevant information when solving a real-world problem.	3.07	3.13		
х	х		х	Q11	Use and apply relevant information to evaluate a problem.	0.76	0.95	***	31
	х			Q12	Use basic mathematical skills to help solve a real-world problem.	0.74	0.82	***	18
х	х			Q13	Identify suitable solutions for a real-world problem using relevant information.	0.90	1.10	***	21
х	х		х	Q14	Identify and explain the best solution for a real-world problem using relevant information.	2.15	2.24		
	Х	х	х	Q15	Explain how changes in a real-world problem situation might affect the solution.	0.24	0.92	***	83
					CAT Total Score	14.57	17.64	***	56

^a. * p<.05 **p<.01 ***p<.001 (2 -tailed) Does not Account for entering ACT/SAT.

^b. Mean difference divided by pooled group standard deviation

(0.1 - 0.3 = small effect; 0.3 - 0.5 = moderate effect; >0.5 = large effect)

CAT Breakdown: Frequency of Points Awarded for Each Question

Sam Houston State University: Fall 2021 & Spring 2022 - ALL STUDENTS

	Skill Assessed by CAT Question	Points Awarded	Freq.	Institution
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		1	289	77.9%
		0	134	36.1%
Q2	Evaluate how strongly correlational-type data supports a hypothesis.	1	135	36.4%
		2	42	11.3%
		3	60	16.2%
		0	178	48.0%
Q3	Provide alternative explanations for a pattern of results that has many possible causes.	1	105	28.3%
	causes.	2	79	21.3%
		3	9	2.4%
		0	221	59.6%
Q4	Identify additional information needed to evaluate a hypothesis.	1	119	32.1%
Q4	identity additional information needed to evaluate a hypothesis.	2	29	7.8%
		3	2	0.5%
		4		0.0%
Q5	Evaluate whether spurious information strongly supports a hypothesis.	0 1	107 264	28.8% 71.2%
		0		
		0	57 107	15.4% 28.8%
Q6	Provide alternative explanations for spurious associations.	2	164	44.2%
		3	43	11.6%
		0	324	87.3%
Q7	Identify additional information needed to evaluate a hypothesis.	1	46	12.4%
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~~		2	10	2.7%
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Q10	Separate relevant from irrelevant information when solving a real-world problem.	2	66	17.8%
		3	145	39.1%
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Q11	Use and apply relevant information to evaluate a problem.	1	230	62.0%
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040	Lies basis mathematical skills to belin active a weat world	0	96	25.9%
Q12	Use basic mathematical skills to help solve a real-world problem.	1	275	74.1%
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Q13	Identify suitable solutions for a real-world problem using relevant information.	2	63	17.0%
		3	22	5.9%
		0	115	31.0%
		1	68	18.3%
Q14	Identify and explain the best solution for a real-world problem using relevant	2	5	1.3%
Q14	information.	3	41	11.1%
		4	113	30.5%
		5	29	7.8%
		0	304	81.9%
Q15	Explain how changes in a real-world problem situation might affect the solution.	1	45	12.1%
415		2	21	5.7%
		3	1	0.3%

Senior Norm

30.2% 69.8% 33.4% 31.9% 16.2% 18.5% 35.5% 26.9% 24.9% 12.7% 40.5% 27.0% 18.9% 8.8% 4.8% 25.1% 74.9% 12.6% 33.0% 43.3% 11.0% 51.9% 40.5% 4.6% 33.8% 66.2% 34.5% 46.2% 19.2% 2.0% 4.2% 14.2% 38.3% 41.2% 26.1% 52.4% 21.6% 18.3% 81.7% 32.7% 37.9% 16.2% 13.1% 32.1% 14.2% 1.9% 11.8% 29.7% 10.2% 45.7% 26.0% 18.8%

9.5%

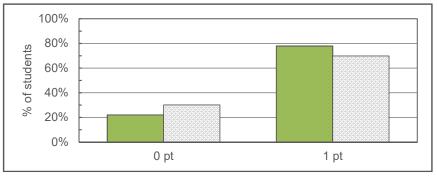
Questions 1-4 present students with a scenario and graph. In this section of questions, students will be asked to summarize the trend of the graph, evaluate the strength of the graph in supporting an argument, provide potential alterniatve explantions for the trend of the graph, and indentify additional inforomation that would be useful to more fully understand the situation. This set of questions aligns with CAT App Skill Set 1.

Legend

Institution Senior

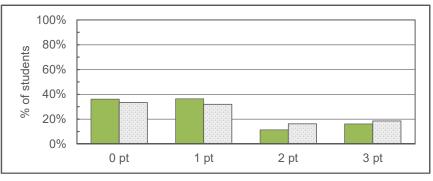
Q1 Summarize the pattern of results in a graph without making inappropriate inferences.

A point is awarded for responses that describe the trend in the graph AND do not attribute the findings to a single cause when there are a variety of potential explanations.



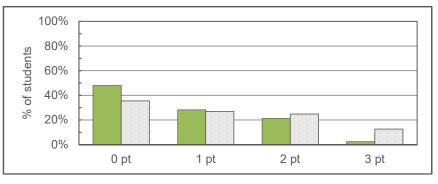
Q2 Evaluate how strongly correlational-type data supports a hypothesis.

Points are awarded for responses that explain the limitations of the correlation observed and the possibility of alternative explanations.

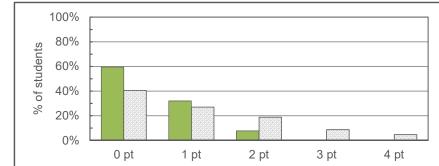


Q3 Provide alternative explanations for a pattern of results that has many possible causes.

Points are awarded for the number of viable alternative explanations provided for the reported findings.



Q4 Identify additional information needed to evaluate a hypothesis.



Points are awarded for clearly identifying types of information needed to evaluate competing hypotheses.

Questions 5-7 present students with a hypothesis and two pieces of evidence. In this section of questions, students will be asked to evaluate the strength of the evidence in supporting a hypothesis, provide potential alternative explanations for the evidence, and identify additional information that would be useful to more fully evaluate the hypothesis. This set of questions aligns with CAT App Skill Set 1.



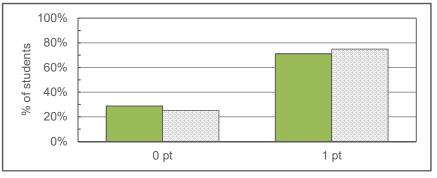
Institution Norm

Q5 Evaluate whether spurious information strongly supports a hypothesis.

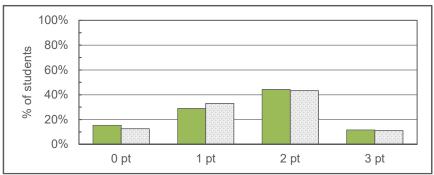
A point is awarded for recognizing that spurious information does not strongly support a hypothesis.

Points are awarded for explaining the

spurious nature of the evidence.

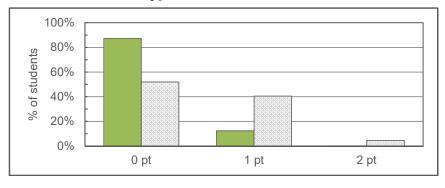


Q6 Provide alternative explanations for spurious associations.



Q7 Identify additional information needed to evaluate a hypothesis.

Points are awarded for clearly identifying new information that needs to be obtained to evaluate the hypothesis.



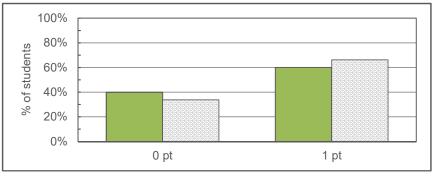
Questions 8-9 present students with the results of a survey and a corresponding marketing claim. In this section of questions, students will be asked to evaluate whether the marketing claim is supported by the results of the survey and to provide potential alternative explantions for the results of the survey. This set of questions aligns with CAT App Skill Set 1.



Institution Norm

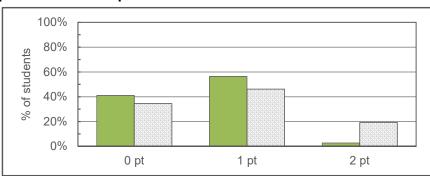
Q8 Determine whether an invited inference is supported by specific information.

A point is awarded for indicating the provided evidence does not strongly support the hypothesis.



Q9 Provide relevant alternative interpretations for a specific set of results.

Points are awarded for providing alternative interpretations of the findings.

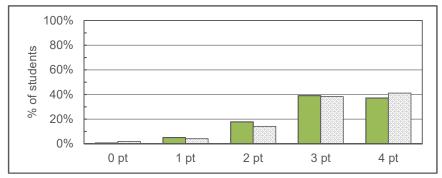


Questions 10-15 present students with a real-world problem-solving task. In this section of questions, students will be asked to evaluate the relevance of available information, read relevant information, evaluate a suggested solution based on relevant information, solve a basic mathematical problem needed to solve the problem, identify a group of appropriate solutions, identify the best solution for a the problem situation, and identify changes to the problem situation that would change the solution. This set of questions aligns with CAT App Skill Set 2.

Legend Institution Senior Norm

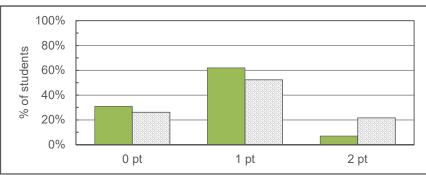
Q10 Separate relevant from irrelevant information when solving a real-world problem.

Points are awarded for correctly identifying information relevant to solving the problem based on the descriptive titles of the avaliable information.



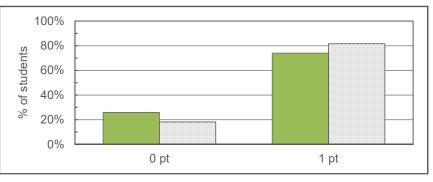
Q11 Use and apply relevant information to evaluate a problem.

Points are awarded for applying relevant information from the additional information to the problem.



Q12 Use basic mathematical skills to help solve a real-world problem.

A points is awarded for performing a basic mathematical calculation needed to help solve a real-world problem.

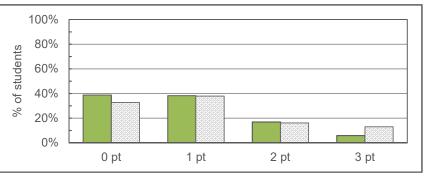


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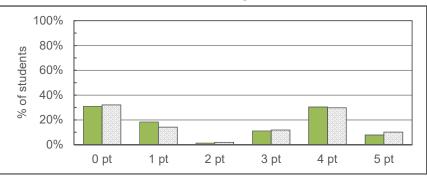
Q13 Identify suitable solutions for a real-world problem using relevant information.

Points are awarded for identifying viable solutions that could solve a real-world problem.



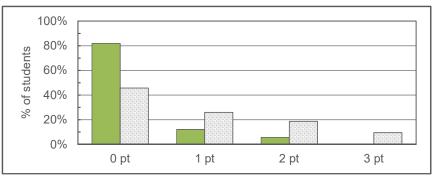
Q14 Identify and explain the best solution for a real-world problem using relevant information.

Points are awarded for identify and explaining the best solution to a realworld problem.



Q15 Explain how changes in a real-world problem situation might affect the solution.

Points are awarded for identifying a number of changes to the real-world problem situation and explaining how the opitmal solution would change.



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		0	178	48.0%
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		3	9	2.4%
		0	221	59.6%
Q4	Identify additional information needed to evaluate a hypothesis.	1	119	32.1%
Q4	identity additional information needed to evaluate a hypothesis.	2	29	7.8%
		3	2	0.5%
		4		0.0%
Q5	Evaluate whether spurious information strongly supports a hypothesis.	0 1	107 264	28.8% 71.2%
		0		
		0	57 107	15.4% 28.8%
Q6	Provide alternative explanations for spurious associations.	2	164	44.2%
		3	43	11.6%
		0	324	87.3%
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		0	115	31.0%
		1	68	18.3%
Q14	Identify and explain the best solution for a real-world problem using relevant	2	5	1.3%
Q14	information.	3	41	11.1%
		4	113	30.5%
		5	29	7.8%
		0	304	81.9%
Q15	Explain how changes in a real-world problem situation might affect the solution.	1	45	12.1%
415		2	21	5.7%
		3	1	0.3%

Fresh Norm

37.8%
62.2%
40.6%
34.2%
51.270
13.5%
11.7%
11.770
47.2%
24.1%
19.1%
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6.1%
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43.1% 43.2% 13.7% 3.1% 4.5% 13.8%
43.1% 43.2% 13.7% 3.1% 4.5% 13.8% 34.9%
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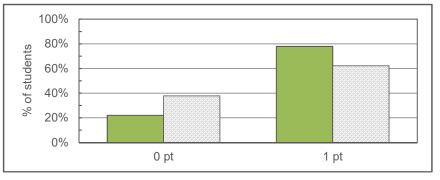
Questions 1-4 present students with a scenario and graph. In this section of questions, students will be asked to summarize the trend of the graph, evaluate the strength of the graph in supporting an argument, provide potential alterniatve explantions for the trend of the graph, and indentify additional inforomation that would be useful to more fully understand the situation. This set of questions aligns with CAT App Skill Set 1.



Institution Freshman Norm

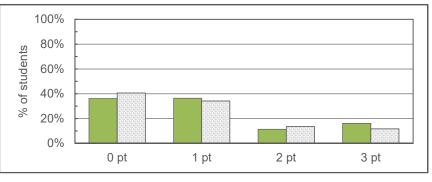
Q1 Summarize the pattern of results in a graph without making inappropriate inferences.

A point is awarded for responses that describe the trend in the graph AND do not attribute the findings to a single cause when there are a variety of potential explanations.



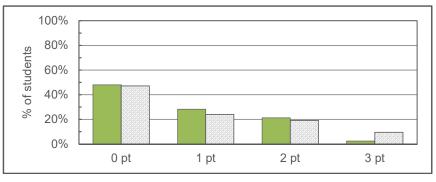
Q2 Evaluate how strongly correlational-type data supports a hypothesis.

Points are awarded for responses that explain the limitations of the correlation observed and the possibility of alternative explanations.

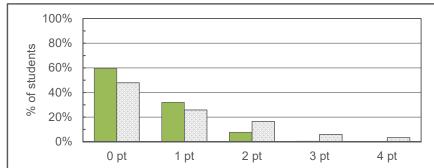


Q3 Provide alternative explanations for a pattern of results that has many possible causes.

Points are awarded for the number of viable alternative explanations provided for the reported findings.



Q4 Identify additional information needed to evaluate a hypothesis.



Points are awarded for clearly identifying types of information needed to evaluate competing hypotheses.

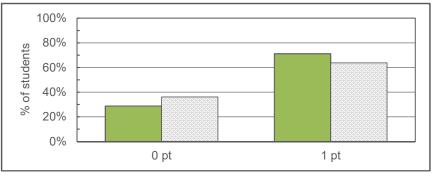
Questions 5-7 present students with a hypothesis and two pieces of evidence. In this section of questions, students will be asked to evaluate the strength of the evidence in supporting a hypothesis, provide potential alternative explanations for the evidence, and identify additional information that would be useful to more fully evaluate the hypothesis. This set of questions aligns with CAT App Skill Set 1.



Institution Freshman Norm

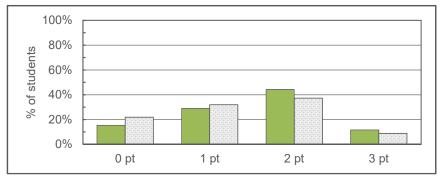
Q5 Evaluate whether spurious information strongly supports a hypothesis.

A point is awarded for recognizing that spurious information does not strongly support a hypothesis.



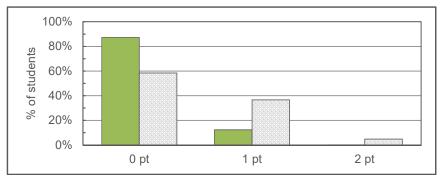
Q6 Provide alternative explanations for spurious associations.

Points are awarded for explaining the spurious nature of the evidence.

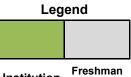


Q7 Identify additional information needed to evaluate a hypothesis.

Points are awarded for clearly identifying new information that needs to be obtained to evaluate the hypothesis.



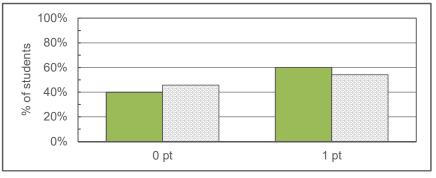
Questions 8-9 present students with the results of a survey and a corresponding marketing claim. In this section of questions, students will be asked to evaluate whether the marketing claim is supported by the results of the survey and to provide potential alternative explantions for the results of the survey. This set of questions aligns with CAT App Skill Set 1.



Institution Norm

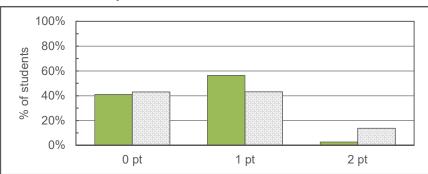
Q8 Determine whether an invited inference is supported by specific information.

A point is awarded for indicating the provided evidence does not strongly support the hypothesis.



Q9 Provide relevant alternative interpretations for a specific set of results.

Points are awarded for providing alternative interpretations of the findings.

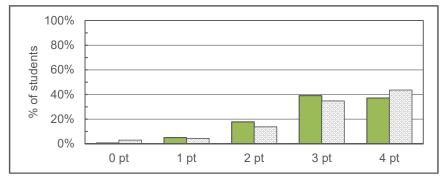


Questions 10-15 present students with a real-world problem-solving task. In this section of questions, students will be asked to evaluate the relevance of available information, read relevant information, evaluate a suggested solution based on relevant information, solve a basic mathematical problem needed to solve the problem, identify a group of appropriate solutions, identify the best solution for a the problem situation, and identify changes to the problem situation that would change the solution. This set of questions aligns with CAT App Skill Set 2.

Legend Institution Freshman Norm

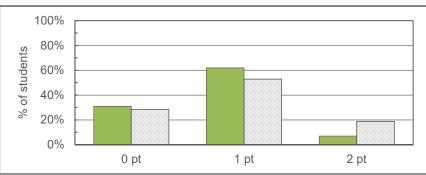
Q10 Separate relevant from irrelevant information when solving a real-world problem.

Points are awarded for correctly identifying information relevant to solving the problem based on the descriptive titles of the avaliable information.



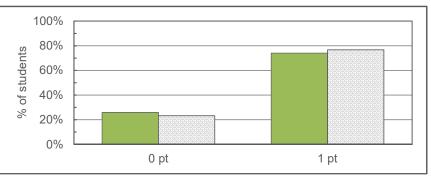
Q11 Use and apply relevant information to evaluate a problem.

Points are awarded for applying relevant information from the additional information to the problem.

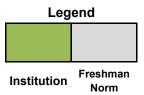


Q12 Use basic mathematical skills to help solve a real-world problem.

A points is awarded for performing a basic mathematical calculation needed to help solve a real-world problem.

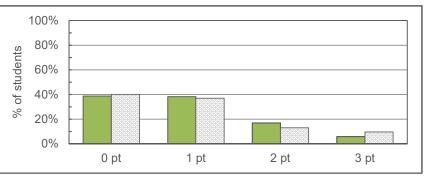


Questions 10-15 present students with a real-world problem-solving task. In this section of questions, students will be asked to evaluate the relevance of available information, read relevant information, evaluate a suggested solution based on relevant information, solve a basic mathematical problem needed to solve the problem, identify a group of appropriate solutions, identify the best solution for a the problem situation, and identify changes to the problem situation that would change the solution. This set of questions aligns with CAT App Skill Set 2.



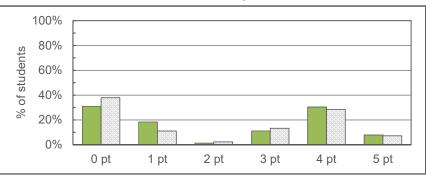
Q13 Identify suitable solutions for a real-world problem using relevant information.

Points are awarded for identifying viable solutions that could solve a real-world problem.



Q14 Identify and explain the best solution for a real-world problem using relevant information.

Points are awarded for identify and explaining the best solution to a realworld problem.



Q15 Explain how changes in a real-world problem situation might affect the solution.

Points are awarded for identifying a number of changes to the real-world problem situation and explaining how the opitmal solution would change.

