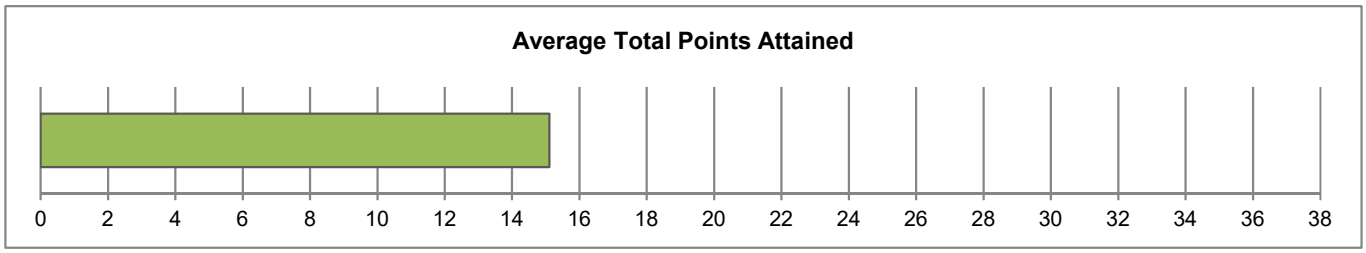
Sam Houston State University

CAT Institutional Report

Fall 2024 - College of Science & Engineering Tech.

CAT Overview: Descriptive Statistics for CAT Total Score
Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

	N	Min.	Max.	Mean	Std. Dev
CAT Total Score	232	4.00	27.00	15.10	4.59



	N	Min.	Max.	Mean	Std. Dev
Time Spent (in minutes)	232	12	96	40	15

CAT Demographics: Descriptive Statistics for Sample

		Freq.	Freq. %
Gender	**Male**	116	51.1%
	Female	111	48.9%
Class Standing	**Freshman**	0	0.0%
	Sophomore	2	0.9%
	Junior	65	28.4%
	Senior	162	70.7%
Class	**Undergraduate**	229	98.7%
	Graduate	3	1.3%
Age	**≤ 20 years**	59	26.8%
	21-25 years	143	65.0%
	≥ 26 years	18	8.2%

		Freq.	Freq. %
Race**	**White**	164	70.7%
	Black or African American	32	13.8%
	American Indian or Alaska Native	5	2.2%
	Asian	19	8.2%
	Native Hawaiian or Other Pacific Islander	1	0.4%
	Other Race	21	9.1%

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

		Freq.	Freq. %
Proficiency with the English Language*	**Excellent**	184	79.3%
	Very Good	41	17.7%
	Good	6	2.6%
	Fair	1	0.4%
	Poor	0	0.0%

* Self-rated

	Freq.	Freq. %
Spanish/Hispanic/Latino Ethnicity	76	32.8%
Considered English primary language?	218	94.0%

CAT Breakdown: Frequency of Points Awarded for Each Question

Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

	Skill Assessed by CAT Question	Points Awarded	Freq.	Institution
Q1	Summarize the pattern of results in a graph without making inappropriate inferences.	**0**	44	19.0%
		1	188	81.0%
Q2	Evaluate how strongly correlational-type data supports a hypothesis.	**0**	77	33.2%
		1	76	32.8%
		2	32	13.8%
		3	47	20.3%
Q3	Provide alternative explanations for a pattern of results that has many possible causes.	**0**	103	44.4%
		1	68	29.3%
		2	49	21.1%
		3	12	5.2%
Q4	Identify additional information needed to evaluate a hypothesis.	**0**	130	56.0%
		1	81	34.9%
		2	20	8.6%
		3	1	0.4%
		4	0	0.0%
Q5	Evaluate whether spurious information strongly supports a hypothesis.	**0**	69	29.7%
		1	163	70.3%
Q6	Provide alternative explanations for spurious associations.	**0**	29	12.5%
		1	75	32.3%
		2	105	45.3%
		3	23	9.9%
Q7	Identify additional information needed to evaluate a hypothesis.	**0**	213	91.8%
		1	18	7.8%
		2	1	0.4%
Q8	Determine whether an invited inference is supported by specific information.	**0**	99	42.7%
		1	133	57.3%
Q9	Provide relevant alternative interpretations for a specific set of results.	**0**	89	38.4%
		1	137	59.1%
		2	6	2.6%
Q10	Separate relevant from irrelevant information when solving a real-world problem.	**0**	1	0.4%
		1	6	2.6%
		2	24	10.4%
		3	98	42.4%
		4	102	44.2%
Q11	Use and apply relevant information to evaluate a problem.	**0**	51	22.0%
		1	169	72.8%
		2	12	5.2%
Q12	Use basic mathematical skills to help solve a real-world problem.	**0**	44	19.0%
		1	187	81.0%
Q13	Identify suitable solutions for a real-world problem using relevant information.	**0**	59	25.5%
		1	117	50.6%
		2	37	16.0%
		3	18	7.8%
Q14	Identify and explain the best solution for a real-world problem using relevant information.	**0**	84	36.2%
		1	42	18.1%
		2	3	1.3%
		3	36	15.5%
		4	51	22.0%
		5	16	6.9%
		0	186	80.2%

Q15	Explain how changes in a real-world problem situation might affect the solution.	**1**	28	12.1%
		2	13	5.6%
		3	5	2.2%

Institutional/Departmental Profile

Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

Evaluate and Interpret Info	Problem Solving	Creative Thinking	Effective Comm.		Skill Assessed by CAT Question	Institution/Department	
						Mean	Avg. % of Attainable Points
X				Q1	Summarize the pattern of results in a graph without making inappropriate inferences.	0.81	81%
X			X	Q2	Evaluate how strongly correlational-type data supports a hypothesis.	1.21	40%
		X	X	Q3	Provide alternative explanations for a pattern of results that has many possible causes.	0.87	29%
	X	X	X	Q4	Identify additional information needed to evaluate a hypothesis.	0.53	13%
X				Q5	Evaluate whether spurious information strongly supports a hypothesis.	0.70	70%
		X	X	Q6	Provide alternative explanations for spurious associations.	1.53	51%
	X	X	X	Q7	Identify additional information needed to evaluate a hypothesis.	0.09	4%
X				Q8	Determine whether an invited inference is supported by specific information.	0.57	57%
		X	X	Q9	Provide relevant alternative interpretations for a specific set of results.	0.64	32%
X	X			Q10	Separate relevant from irrelevant information when solving a real-world problem.	3.27	82%
X	X		X	Q11	Use and apply relevant information to evaluate a problem.	0.83	42%
	X			Q12	Use basic mathematical skills to help solve a real-world problem.	0.81	81%
X	X			Q13	Identify suitable solutions for a real-world problem using relevant information.	1.06	35%
X	X		X	Q14	Identify and explain the best solution for a real-world problem using relevant information.	1.90	38%
	X	X	X	Q15	Explain how changes in a real-world problem situation might affect the solution.	0.30	10%
					CAT Total Score	15.10	40%

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

Senior CAT Means Comparison Report

Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

Evaluate and Interpret Info	Problem Solving	Creative Thinking	Effective Comm.		Skill Assessed by CAT Question	Institution	National[a]		
						Mean	Mean	Probability of difference[b]	Effect Size[c]
X				Q1	Summarize the pattern of results in a graph without making inappropriate inferences.	0.81	0.70	***	+.26
X			X	Q2	Evaluate how strongly correlational-type data supports a hypothesis.	1.21	1.20		
		X	X	Q3	Provide alternative explanations for a pattern of results that has many possible causes.	0.87	1.15	***	-.28
	X	X	X	Q4	Identify additional information needed to evaluate a hypothesis.	0.53	1.10	***	-.60
X				Q5	Evaluate whether spurious information strongly supports a hypothesis.	0.70	0.75		
		X	X	Q6	Provide alternative explanations for spurious associations.	1.53	1.53		
	X	X	X	Q7	Identify additional information needed to evaluate a hypothesis.	0.09	0.56	***	-.95
X				Q8	Determine whether an invited inference is supported by specific information.	0.57	0.66	**	-.18
		X	X	Q9	Provide relevant alternative interpretations for a specific set of results.	0.64	0.85	***	-.32
X	X			Q10	Separate relevant from irrelevant information when solving a real-world problem.	3.27	3.13	*	+.17
X	X		X	Q11	Use and apply relevant information to evaluate a problem.	0.83	0.95	**	-.21
	X			Q12	Use basic mathematical skills to help solve a real-world problem.	0.81	0.82		
X	X			Q13	Identify suitable solutions for a real-world problem using relevant information.	1.06	1.10		
X	X		X	Q14	Identify and explain the best solution for a real-world problem using relevant information.	1.90	2.24	**	-.18
	X	X	X	Q15	Explain how changes in a real-world problem situation might affect the solution.	0.30	0.92	***	-.73
					CAT Total Score	15.10	17.64	***	-.47

[a.] National user norms updated Fall 2019

[b.] * p<.05 **p<.01 ***p<.001 (2 –tailed) Does not Account for entering ACT/SAT.

[c.] Mean difference divided by pooled group standard deviation. (0.1 - 0.3 = small effect; 0.3 - 0.5 = moderate effect; >0.5 = large effect)
The map of skills covered by each question above is a suggested theoretical guide for interpreting results.

CAT Breakdown: Frequency of Points Awarded for Each Question

Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

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		4	0	0.0%
Q5	Evaluate whether spurious information strongly supports a hypothesis.	**0**	69	29.7%
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Q7	Identify additional information needed to evaluate a hypothesis.	**0**	213	91.8%
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Q8	Determine whether an invited inference is supported by specific information.	**0**	99	42.7%
		1	133	57.3%
Q9	Provide relevant alternative interpretations for a specific set of results.	**0**	89	38.4%
		1	137	59.1%
		2	6	2.6%
Q10	Separate relevant from irrelevant information when solving a real-world problem.	**0**	1	0.4%
		1	6	2.6%
		2	24	10.4%
		3	98	42.4%
		4	102	44.2%
Q11	Use and apply relevant information to evaluate a problem.	**0**	51	22.0%
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Q12	Use basic mathematical skills to help solve a real-world problem.	**0**	44	19.0%
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Q13	Identify suitable solutions for a real-world problem using relevant information.	**0**	59	25.5%
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		2	3	1.3%
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Senior Norm
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43.3%
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51.9%
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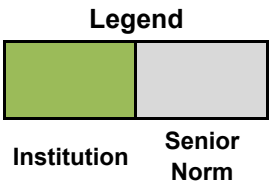
4.6%
33.8%
66.2%
34.5%
46.2%
19.2%
2.0%
4.2%
14.2%
38.3%
41.2%
26.1%
52.4%
21.6%
18.3%
81.7%
32.7%
37.9%
16.2%
13.1%
32.1%
14.2%
1.9%
11.8%
29.7%
10.2%
45.7%

26.0%
18.8%
9.5%

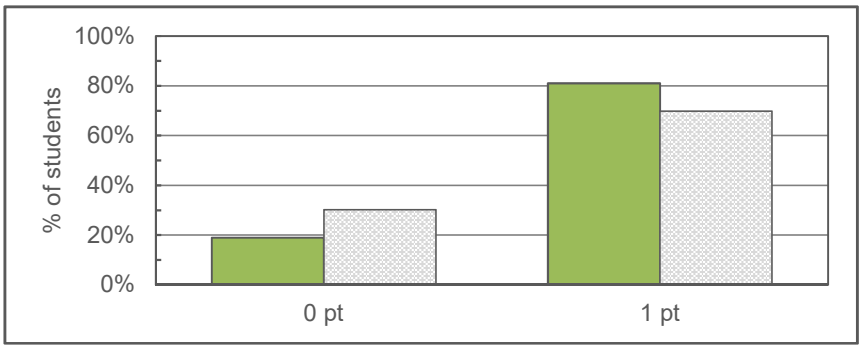
Frequency of Points Awarded on the CAT
Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

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.



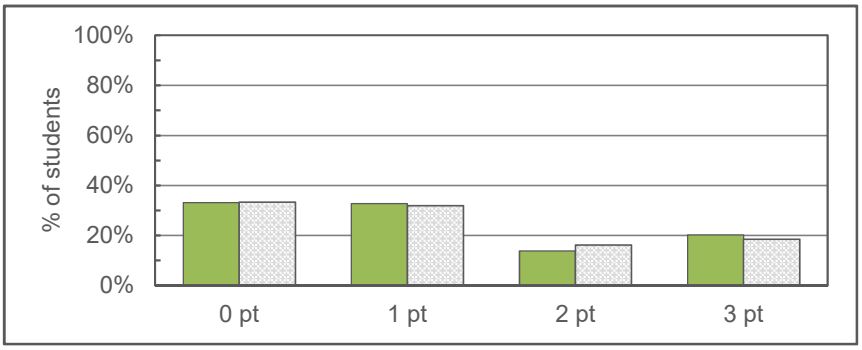
Q1 Summarize the pattern of results in a graph without making inappropriate inferences.

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.



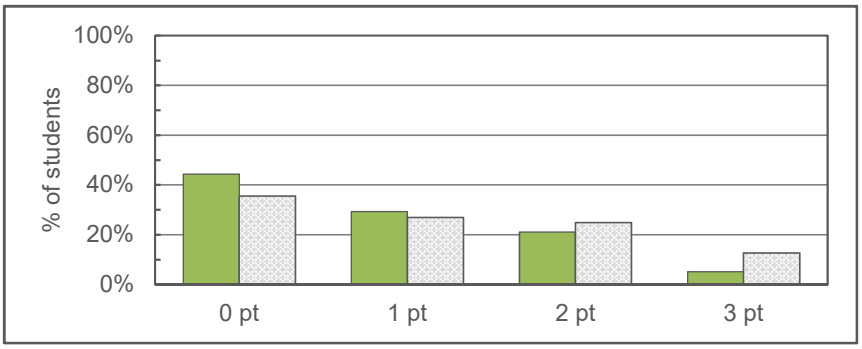
Q2 Evaluate how strongly correlational-type data supports a hypothesis.

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



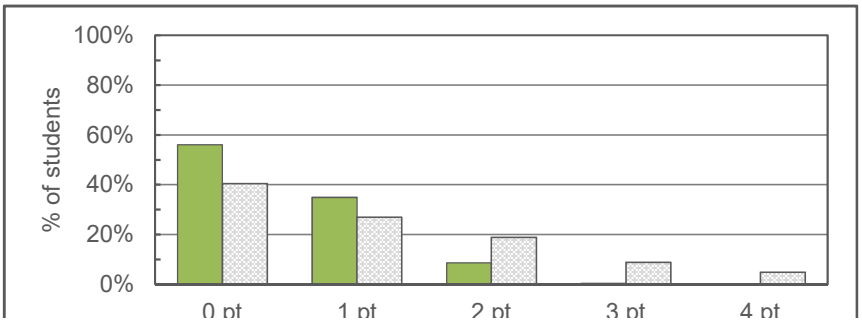
Q3 Provide alternative explanations for a pattern of results that has many possible causes.

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



Q4 Identify additional information needed to evaluate a hypothesis.

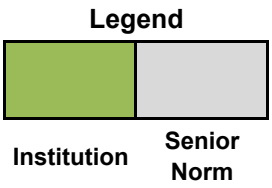
Points are awarded for clearly identifying types of information needed to evaluate competing hypotheses.




0 pt
1 pt
2 pt
3 pt
4 pt

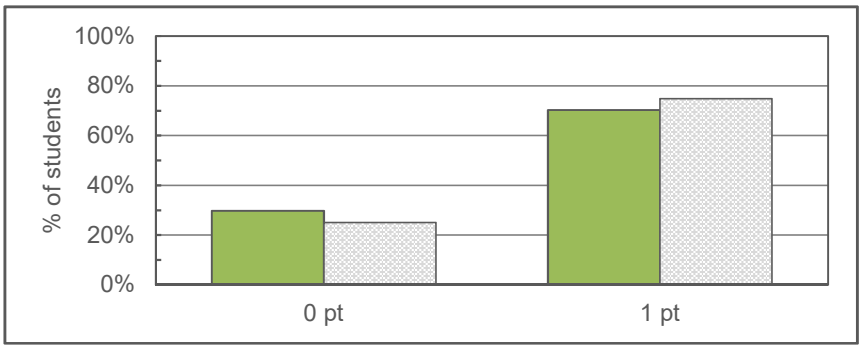
Frequency of Points Awarded on the CAT
Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

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 explantions 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.



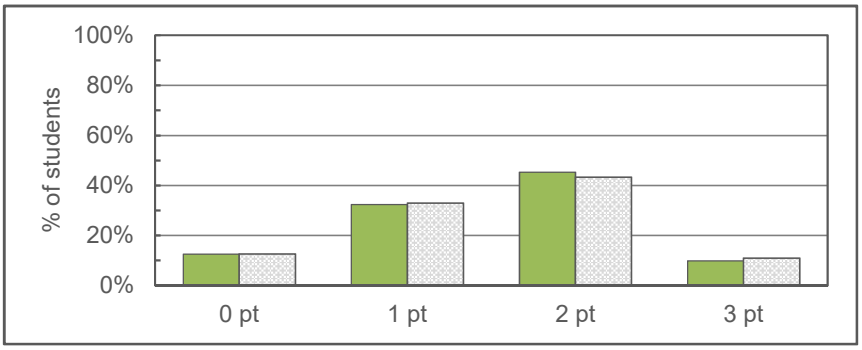
Q5 Evaluate whether spurious information strongly supports a hypothesis.

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



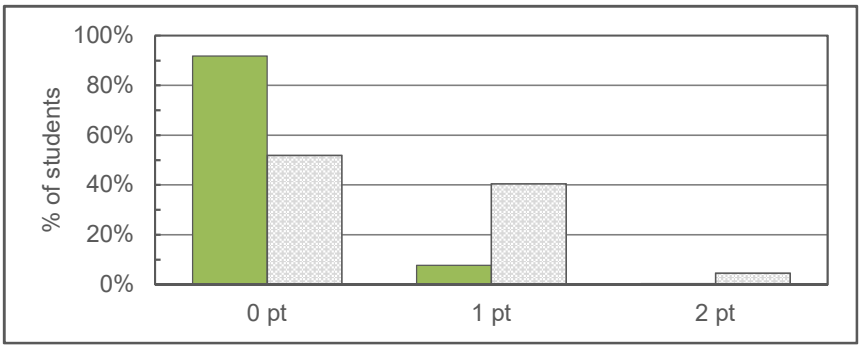
Q6 Provide alternative explanations for spurious associations.

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



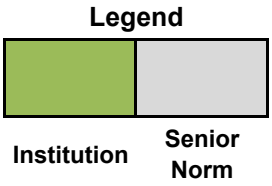
Q7 Identify additional information needed to evaluate a hypothesis.

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



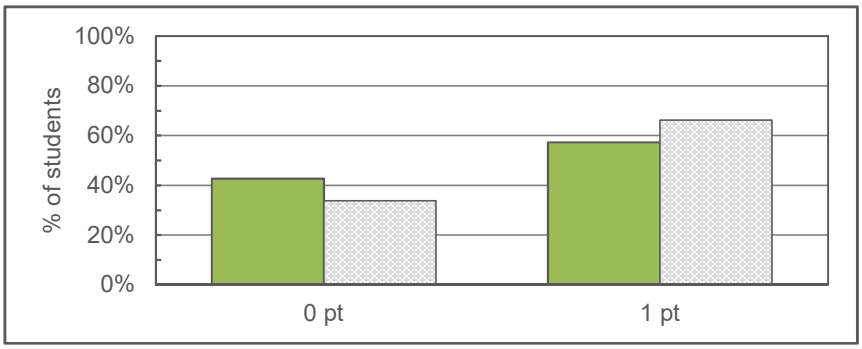
Frequency of Points Awarded on the CAT
Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

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.



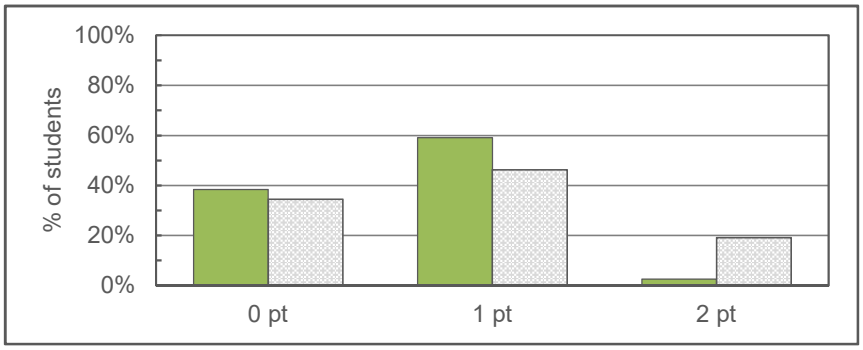
Q8 Determine whether an invited inference is supported by specific information.

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



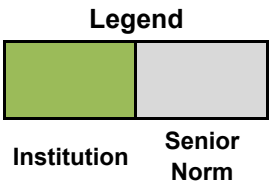
Q9 Provide relevant alternative interpretations for a specific set of results.

Points are awarded for providing alternative interpretations of the findings.



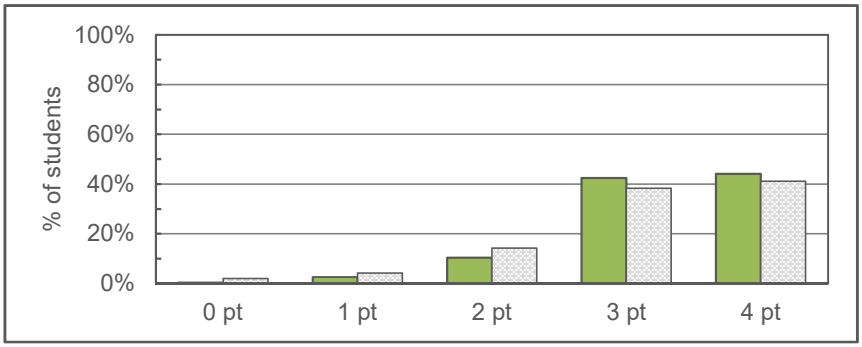
Frequency of Points Awarded on the CAT
Sam Houston State University: Fall 2024 - College of Science & Engineering Tech.

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 avaliable 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.



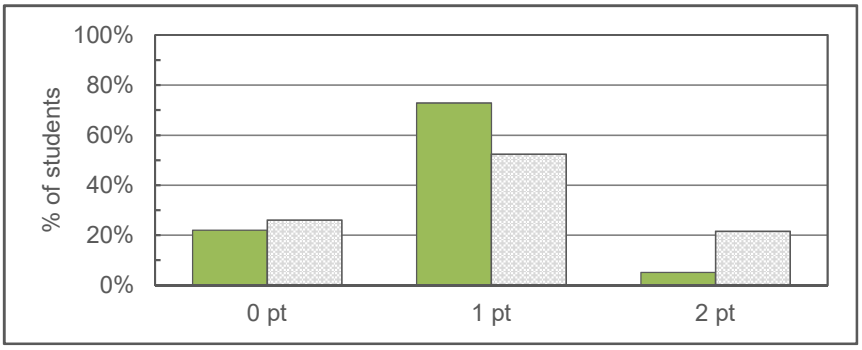
Q10 Separate relevant from irrelevant information when solving a real-world problem.

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



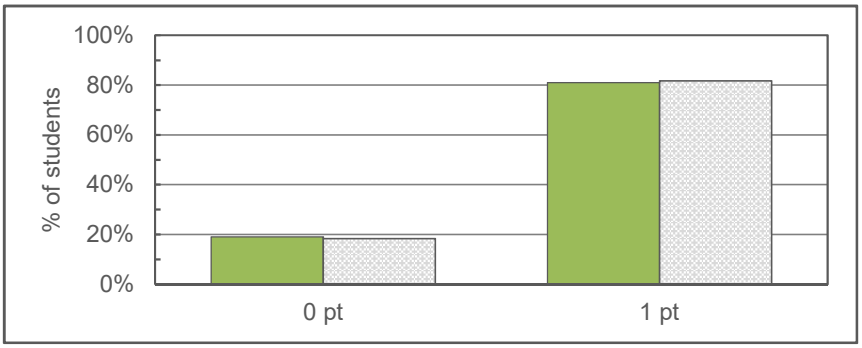
Q11 Use and apply relevant information to evaluate a problem.

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.



Frequency of Points Awarded on the CAT
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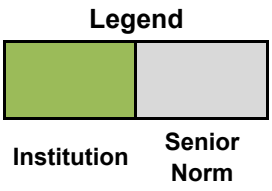
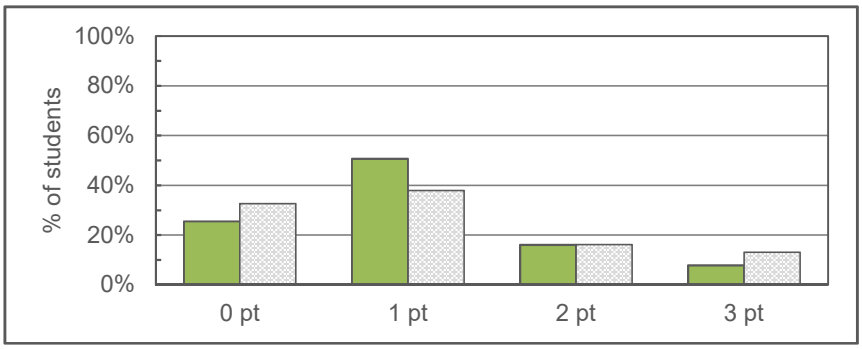


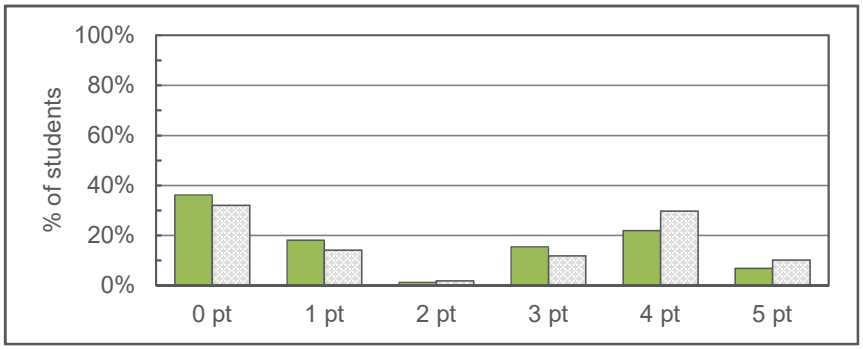
Q13 Identify suitable solutions for a real-world problem using relevant information.

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 real-world 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.