Students' Representations and Solution Methods to the Task: "Which Subject Did Lisa Outperform Her Classmates the Most?"
(SAMPLE)

a. Solution A

	Math	Science	English
Mean	81.00	81.00	81.00
Mean (without Lisa's score)	80.36	80.36	80.31
Change in mean	0.64	0.64	0.69

Based on the changes in the mean without Lisa's score, Lisa performed the best in English, since the mean changed the most without her score.

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<u>b. Solution B</u>

Percentage change of Lisa's score compared to lowest scorer of each subject

	$\dfrac{\text{Lisa's Score - Minimum Score}}{\text{Minimum Score}} \times 100\%$
Change of Lisa's score from Math's minimum score	$\dfrac{90-72}{72}$ = 25%
Change of Lisa's score from Science's minimum score	$\dfrac{90-72}{72}$ = 25%
Change of Lisa's score from English's minimum score	$\dfrac{90-72}{72}$ = 25%

Lisa performed equally well in all three subjects, since the difference between her score and the lowest scorer is the same.

c. Solution C

	Math	Science	English
Mean	81.00	81.00	81.00
Lisa's score - Mean	9.00	9.00	9.00
SD	6.35	4.94	6.00

Since the difference between Lisa's score to the mean is the same, we will next look at the spread of scores in each subject. Since Science's scores are the most consistent, Lisa's performance is the most outstanding here, since she is compared to a consistent group.