

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Glenn is organizing a party and wants to mix a Jungle Juice Lite containing 10% alcohol with some Jungle Juice Super-Duper containing 20% alcohol to obtain 10 gallons of a Jungle Juice Moderate that will contain 14% alcohol. How many gallons of each should be used?
 - (a) Set variables and **explain fully in English** what they stand for.

(b) Write equation(s) reflecting the data in the statement.

(c) Solve the equation(s) from Part (b) to come up with an answer to the question posed.

2. Solve the following linear inequality:

$$\frac{1}{4}x - \frac{1}{2} < \frac{1}{2}x - \frac{2}{3}.$$

Please, write your answer in interval notation and graph the solution set.