WARM UP:

Ms. Witchger is buying candy for the Homecoming Parade and plans to stop at Cub to buy bags of Snickers and Butterfingers.

> She wants to buy at least 2 bags of Snickers.

> She wants to buy no more than 4 bags of Butterfingers.

a.) Define the variables.

x: # of bags of Snickers

y: # of bags of Butterfingers

b.) Write a system of inequalities to represent the constraints (restrictions) of the situation.

$x \geq 2$ AND $y \leq 4$

Learning Target: I can graph systems of linear inequalities to find a feasible region.

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1.3B Graphing Systems of Linear Inequalities to Find a Feasible Region

2) Remember the Old Navy problem from **section 1.3A**?

Sale at Old Navy

Jeans: $15

T-shirts: $5

- Mom says you have to buy at least two pair of jeans.
- You want at least one t-shirt.
- You buy at most 7 items.

Record here the variables that you identified and define from section 1.3A.

j: # of jeans

t: # of t-shirts

Record here the constraints you found from section 1.3A.

$t \geq 1$ $j \geq 2$ $t + j \leq 7$

Record here the objective equation

S: amount you spend

$S = \$15j + \$5t$

a) Graph the system of inequalities (3 boundary lines) from section 1.3A (problem 1d) to identify the feasible region.

RESTRICT. $j \geq 2$, $t \geq 1$, $j + t \leq 7$

b) Identify two points that fall within the feasible region.

j	t
7	0
0	7

i) Explain what each point represents in the context of the problem.

represents the # of jeans and t-shirts that satisfy the restrictions

ii) Justify that the constraints of the situation are satisfied by these two points.