Lorenz curves

Obie: 2
Michael: 5
Llewelyn: 9
Rudy: 20
Kitty: 30
$X = (2, 5, 9, 20, 30)$

Cumulative income:

$(2, 7, 16, 36, 66)$

Cumulative income share:

- divide cumulative income by total income

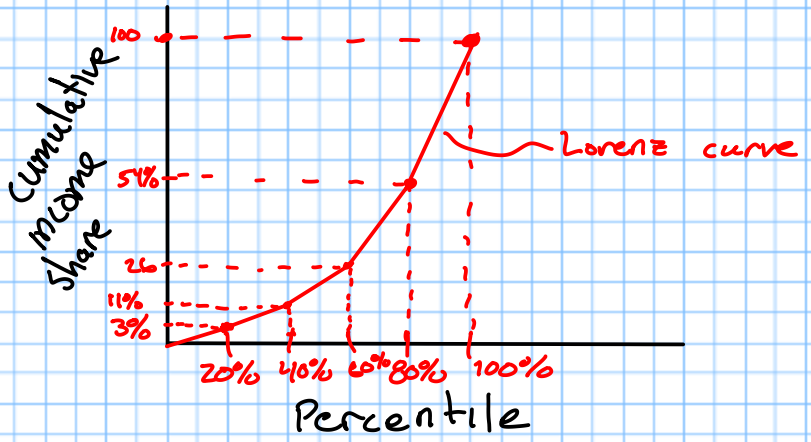
$\left(\frac{2}{66}, \frac{7}{66}, \frac{16}{66}, \frac{36}{66}, \frac{66}{66}\right)$

$(3\%, 11\%, 26\%, 54\%, 100\%)$

↑ cumulative income shares

Percentiles:

$(20\%, 40\%, 60\%, 80\%, 100\%)$



How much income does the lowest 40% have?

→ 11%

How much income does the top 20% have?

→ 100% − 54% = 46%

Question

What if everyone has the same income?

$X = (10, 10, 10, 10, 10)$

Cumulative income:

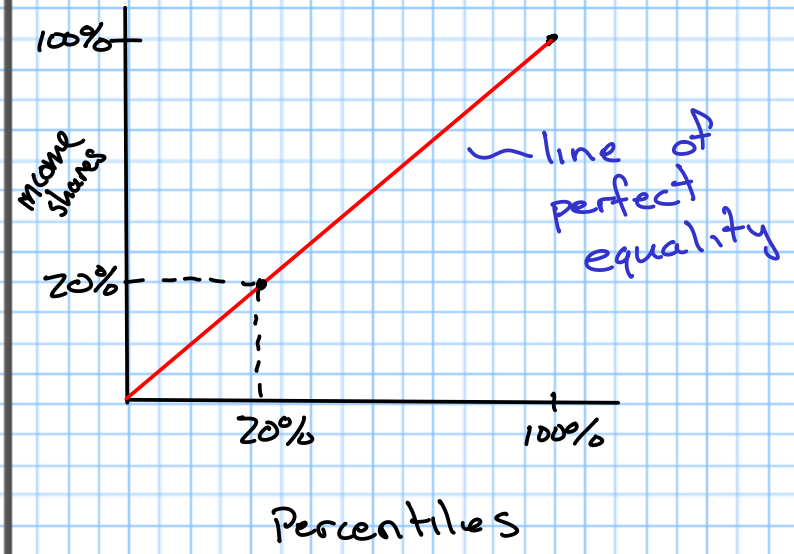
(10, 20, 30, 40, 50)

Cumulative income shares:

(20%, 40%, 60%, 80%, 100%)

Percentiles:

(20%, 40%, 60%, 80%, 100%)



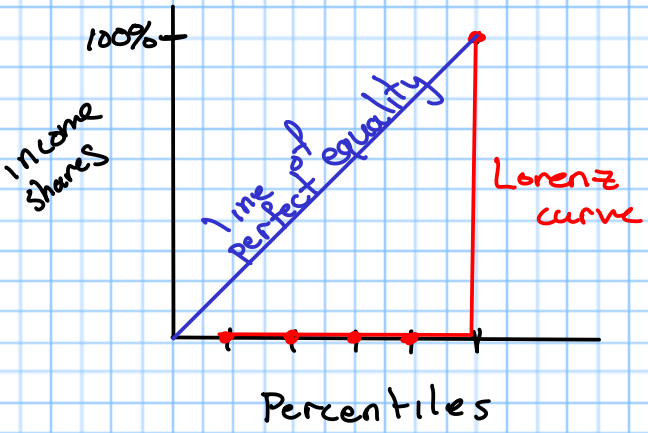
Question:

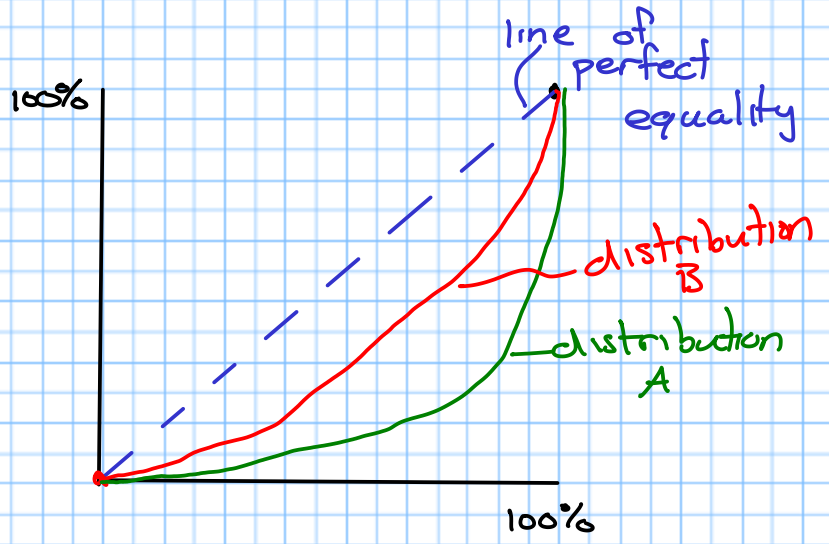
What about "perfect" inequality?

$X = (0, 0, 0, 0, 100)$

Cumulative income shares:

(0%, 0%, 0%, 0%, 100%)





B is closer to the line of perfect equality than A

Is B less unequal than A?