Continuous Uniform - Solving for X-Value

Problem Setup: When driving to your university campus from home:

- Your commute times follow a uniform distribution
- And are between 30 and 55 minutes.

Question: 30% of the time it takes you less than how many minutes to get to campus?

Solution:

$$P(x_1 \le x \le x_2) = \frac{x_2 - x_1}{b - a}$$

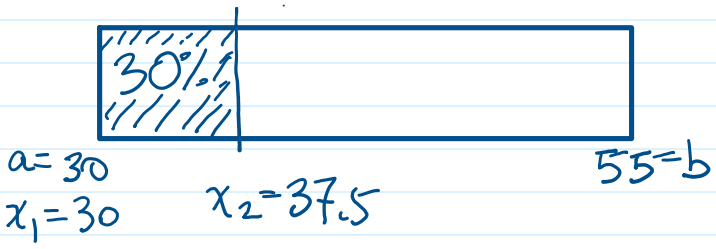
$$0.30 = \frac{x - 30}{55 - 30}$$

$$0.30(55-30) = x - 30$$

$$0.30(25) + 30 = x - 30 + 30$$

$$0.30(25) + 30 = x$$

$$37.5 = x \rightarrow$$



30% of the time your travel times are less than 37.5 minutes.