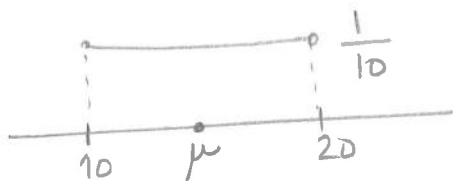


5.3

Suppose X is a random variable best described by a uniform probability distribution with $c = 10$ and $d = 30$.

- Find $f(x)$.
- Find the mean and standard deviation of x .
- Graph $f(x)$, and locate μ and the interval $\mu \pm 2\sigma$ on the graph. Note that the probability that x assumes a value within the interval $\mu \pm 2\sigma$ is equal to 1.

a.



b. $\mu = 15$ $\sigma^2 = \frac{(20-10)^2}{12}$ $\sigma = \frac{20-10}{\sqrt{12}} = 2.89$

c. $2\sigma = 5.77$

$$\mu \pm 2\sigma = 15 \pm 5.77 = (9.23, 20.77)$$