FIGURE 28.17. (*A*) An example of a discrete probability distribution f_i on the range $i = 0, ..., 20$. (*B*) This can also be represented as a **cumulative distribution** F_i, which is the probability of drawing a value less than or equal to i. (*C*) The area under a **probability density** $f(x)$ gives the probability that a continuous variable x lies within some range of values. For example, the *blue shaded area* gives the chance that $x < 2.2$ as

$$\int_{-\infty}^{2.2} f(x)dx = 0.47.$$

(*D*) The cumulative distribution $F(x)$ gives the probability that the value is smaller than x; the point at $x = 2.2$, $F(x) = 0.47$ corresponds to the shaded area in *C*.

Evolution © 2007 Cold Spring Harbor Laboratory Press