

29. The daily demand at a bakery for a certain cake is as follows:

Daily demand	0	1	2	3	4
Probability	0.15	0.25	0.30	0.15	0.15

It costs the bakery \$4 to bake each cake, which sells for \$20. Any cakes left unsold at the end of the day are thrown away. Would the bakery have a higher expected profit if it baked 2 or 3 or 4 cakes daily?

30. If  $E[X] = 5$  and  $E[Y] = 12$ , find

(a)  $E[3X + 4Y]$

(b)  $E[2 + 5Y + X]$

(c)  $E[4 + Y]$

31. Determine the expected sum of a pair of fair dice by

(a) Using the probability distribution of the sum

(b) Using Example 5.5 along with the fact that the expected value of the sum of random variables is equal to the sum of their expected values

32. A husband's year-end bonus will be

0	with probability 0.3
\$1000	with probability 0.6
\$2000	with probability 0.1

His wife's bonus will be

\$1000	with probability 0.7
\$2000	with probability 0.3

Let  $S$  be the sum of their bonuses, and find  $E[S]$ .

33. The following data give the numbers of U.S. bank failures in the years 1995 to 2002.

Year	Closed or assisted
1995	8
1996	6
1997	1
1998	3
1999	8
2000	7
2001	4
2002	11