Conditions

the month in which the year's highest temperature occurs in a city has probabilities of the ratio 1:3:6:8 for May, June, July and August, respectively. Find the probability that the highest temperature occurs in either May or June.

Solution

The probability of that the highest temperature occurs in either May or June is the sum of probabilities of the event in May and June. The ratio of temperatures shows us, that the probability of that the highest temperature is in May is:

$$P = \frac{1}{1+3+6+8} = \frac{1}{18}$$

And in June is:

$$P = \frac{3}{1+3+6+8} = \frac{3}{18} = \frac{1}{6}$$

Then the probability of that the highest temperature occurs in either May or June is the sum:

$$\frac{1}{18} + \frac{1}{6} = \frac{4}{18} = \frac{2}{9}$$

Answer: $\frac{2}{9}$