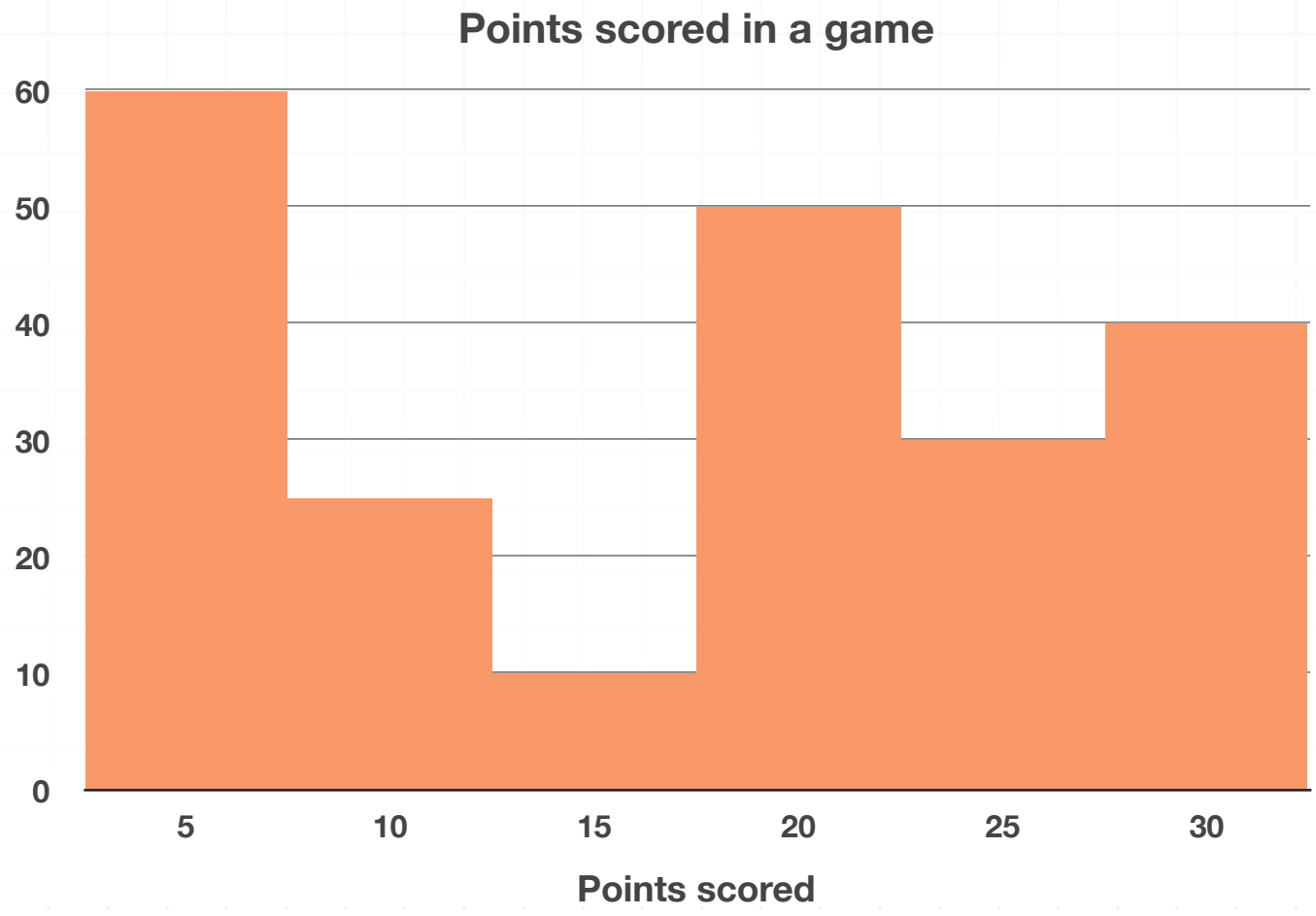
Topic: Spread: range and IQR

Question: What is the range of the data shown in the frequency histogram?



Answer choices:

A 5

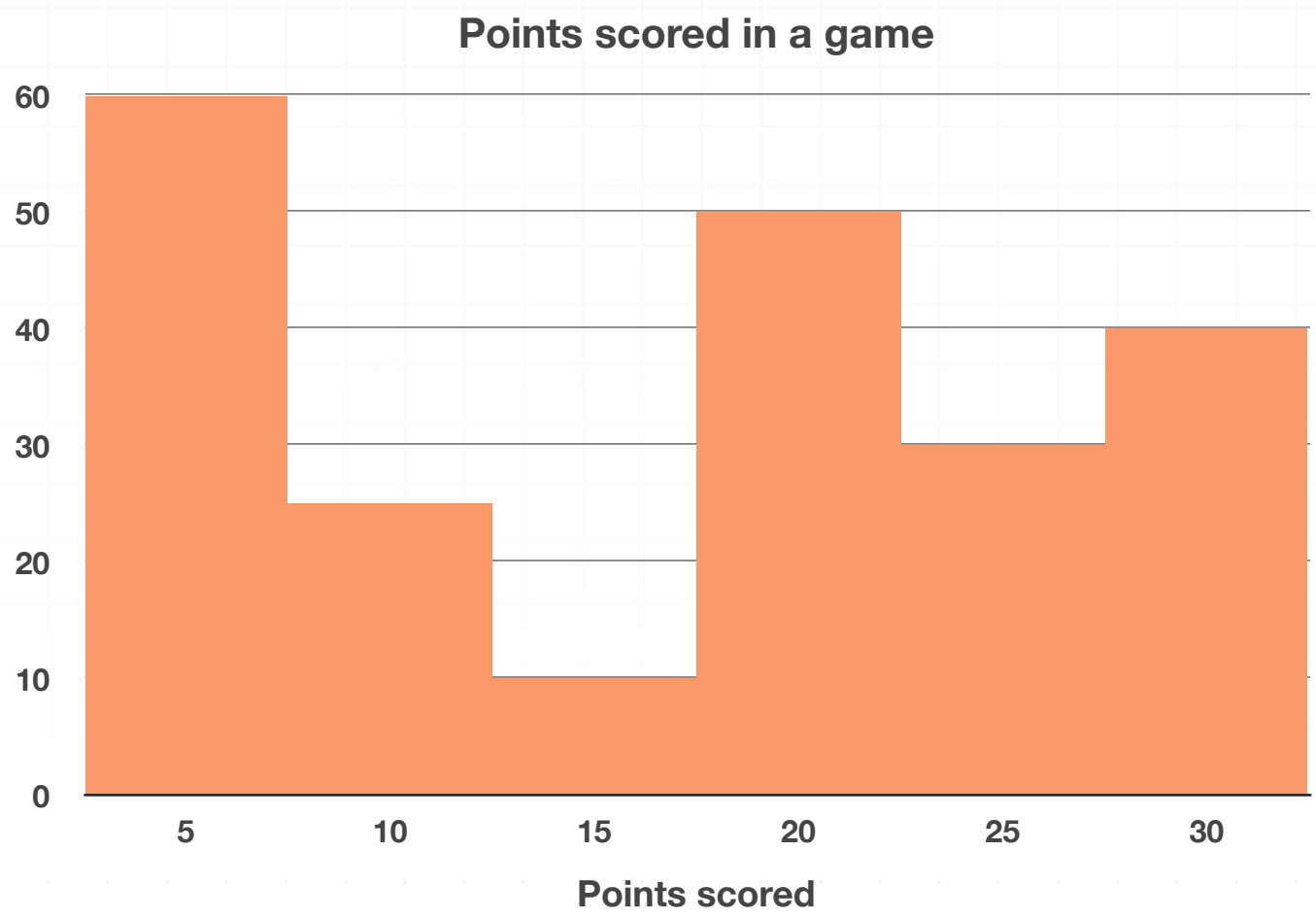
B 10

C 25

D 40

Solution: C

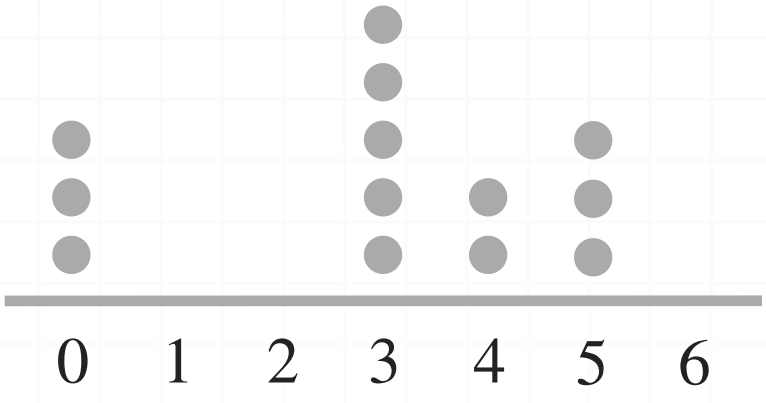
The range of a data set is the largest number in the data set minus the smallest number in the data set. Here the largest number of points scored was 30 and the lowest number of points scored was 5. The frequency at which 5 or 30 occurred isn't relevant to solve the problem.



This makes the range $30 - 5 = 25$. Be careful not to use the frequencies to calculate the range, they just tell you how many of a specific number you have. For example, in this data set you have 60 fives, 25 tens, and so on.

Topic: Spread: range and IQR

Question: The dot plot shows the number of emails sent on Monday by each employee. What is the IQR of the data?



Answer choices:

A 2

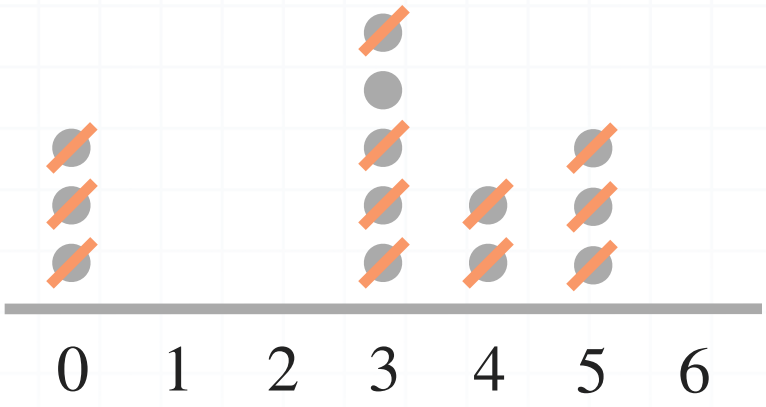
B 3

C 5

D 6

Solution: B

To find the IQR of a data set, we need to find the median of the upper half and the median of the lower half. First let's find the median of the full data set. There are 13 items in the data set, so if we cross off six data items from each side,



we see that the median is 3. The lower half of the data (everything below the median) is $0, 0, 0, 3, 3, 3$, and the median of that lower half is

$$\frac{0+3}{2} = 1.5$$

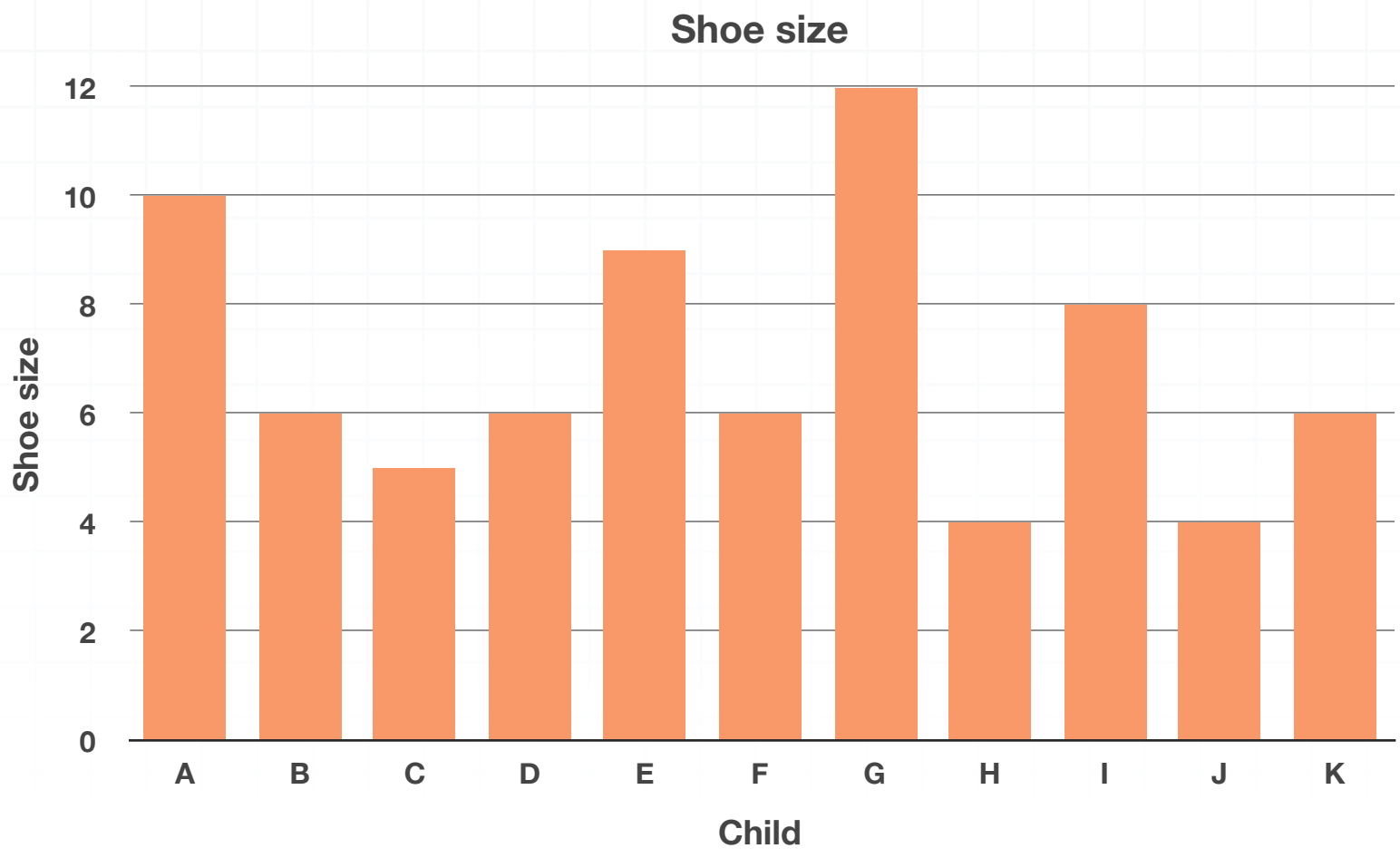
The upper half of the data (everything above the median) is $3, 4, 4, 5, 5, 5$, and the median of that upper half is

$$\frac{4+5}{2} = 4.5$$

Now we can say that the IQR is $4.5 - 1.5 = 3$.

Topic: Spread: range and IQR

Question: What is the range of the data set shown in the graph?



Answer choices:

A 4

B 8

C 14

D 12

Solution: B

The range of a data set is the largest number minus the smallest number. Child G has the largest shoe size (size 12), and children H and J share the smallest shoe size (size 4). This means the range is $12 - 4 = 8$.