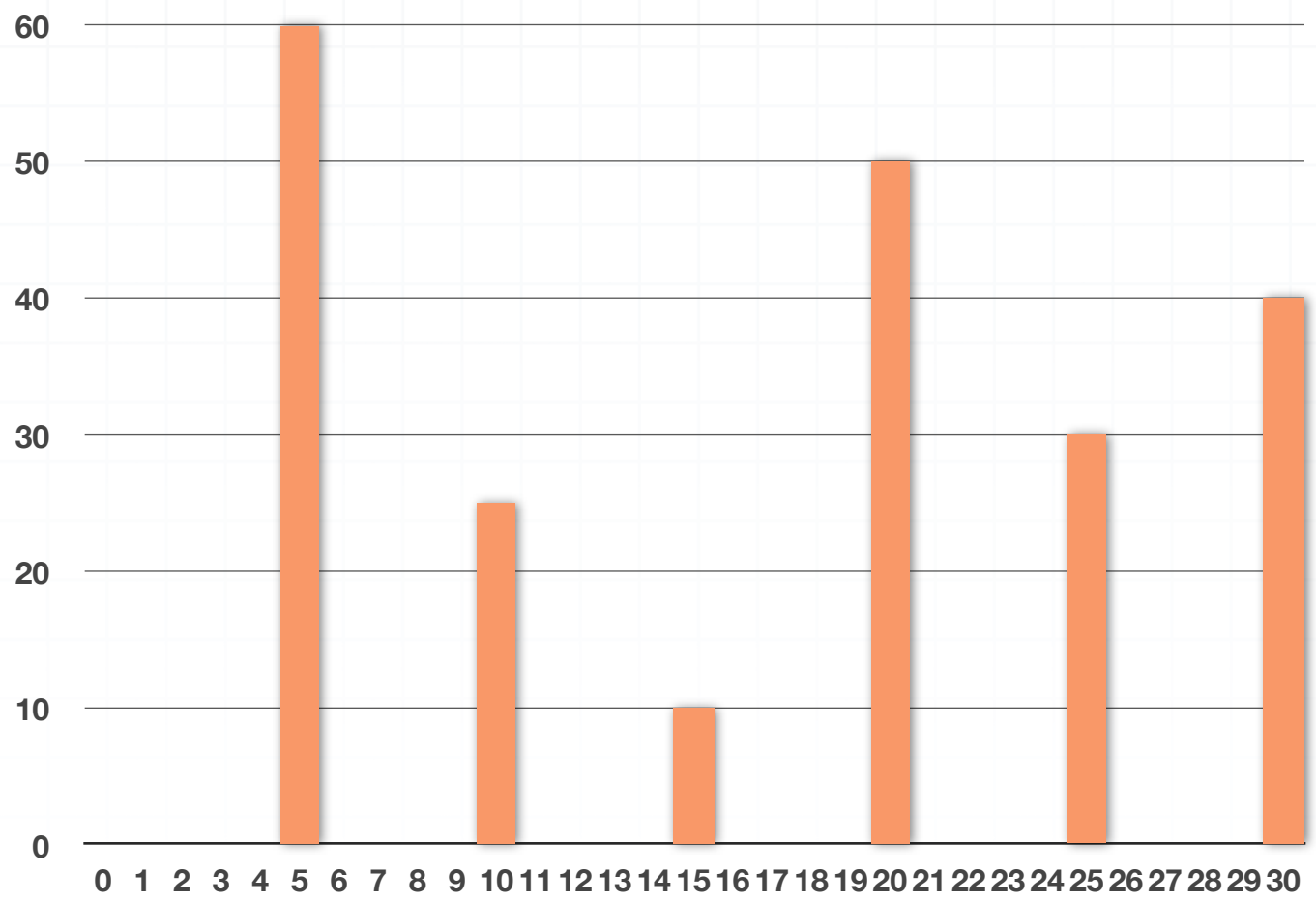
Topic: Measures of spread

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



Answer choices:

A 5

B 10

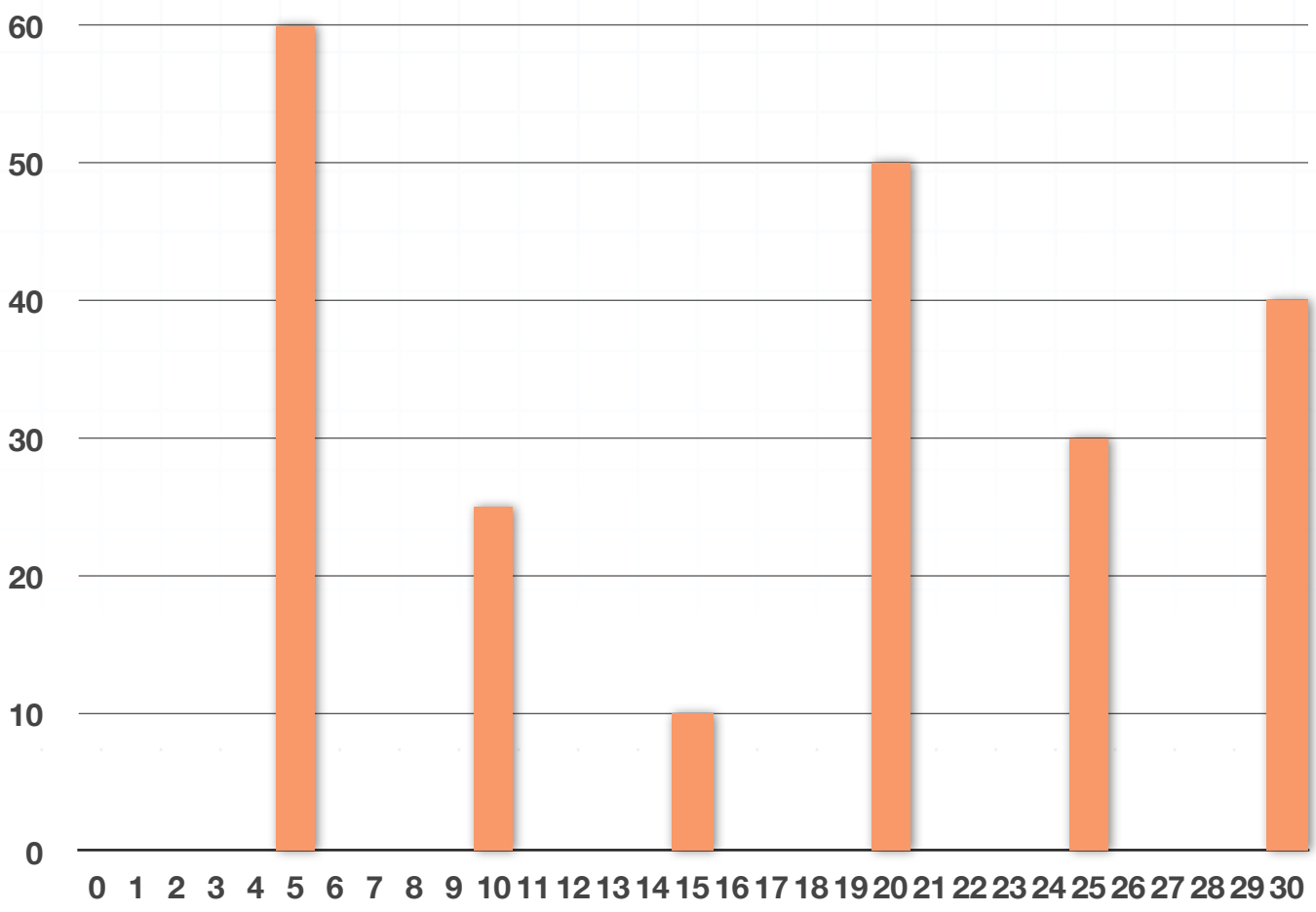
C 25

D 50

Solution: C

The range of a data set is the difference between the largest value and the smallest value in the data set.

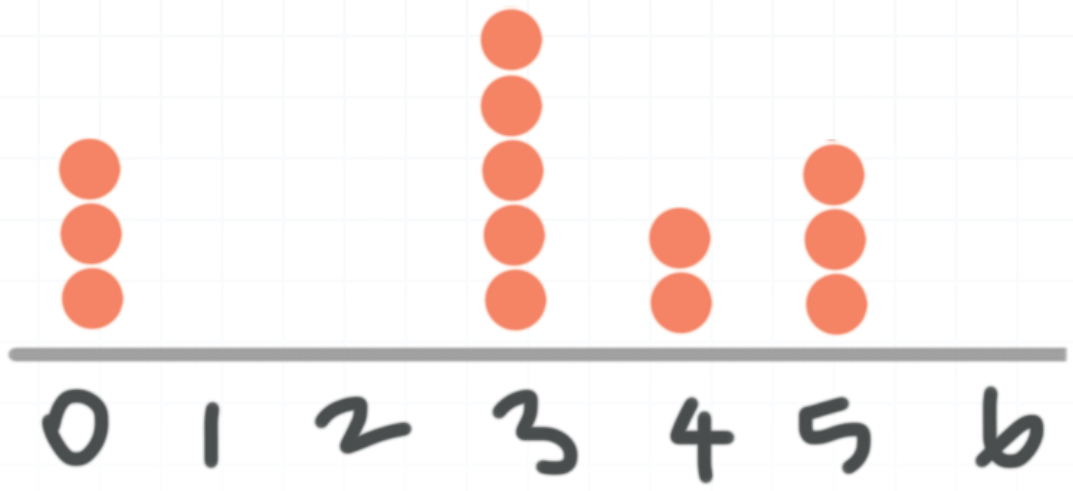
Here, the largest number is 30 and the smallest number is 5. The frequency at which 5 or 30 occurred (60 and 40, respectively) isn't relevant to determining the range.



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

Topic: Measures of spread

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

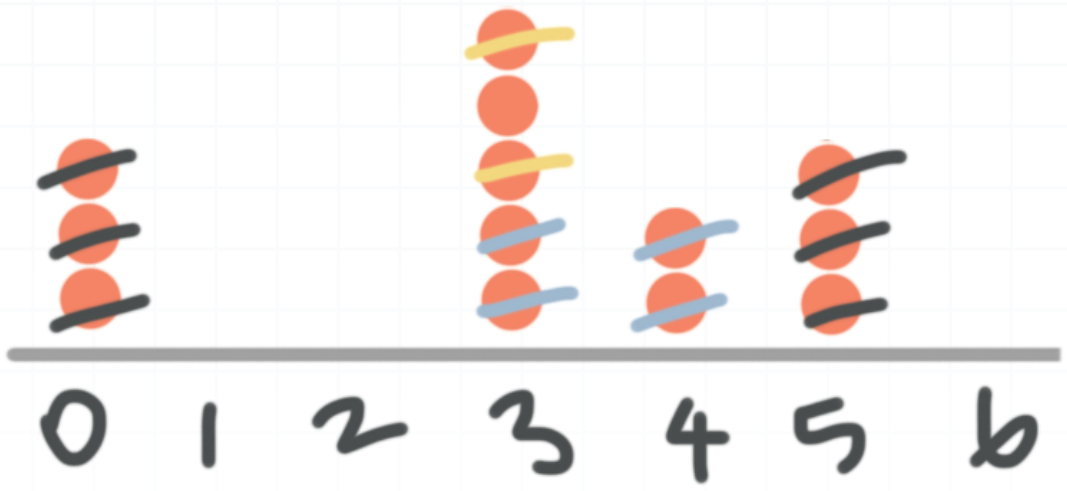
B 3

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: Measures of spread

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 $12 - 4 = 8$.