Example Exercises

Descriptives

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is the mode?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is the median?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is the mean?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is the range?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What score is the 22nd percentile?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is Q1?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is Q3?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is the interquartile range?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is the semi-interquartile range?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

What is the variance?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

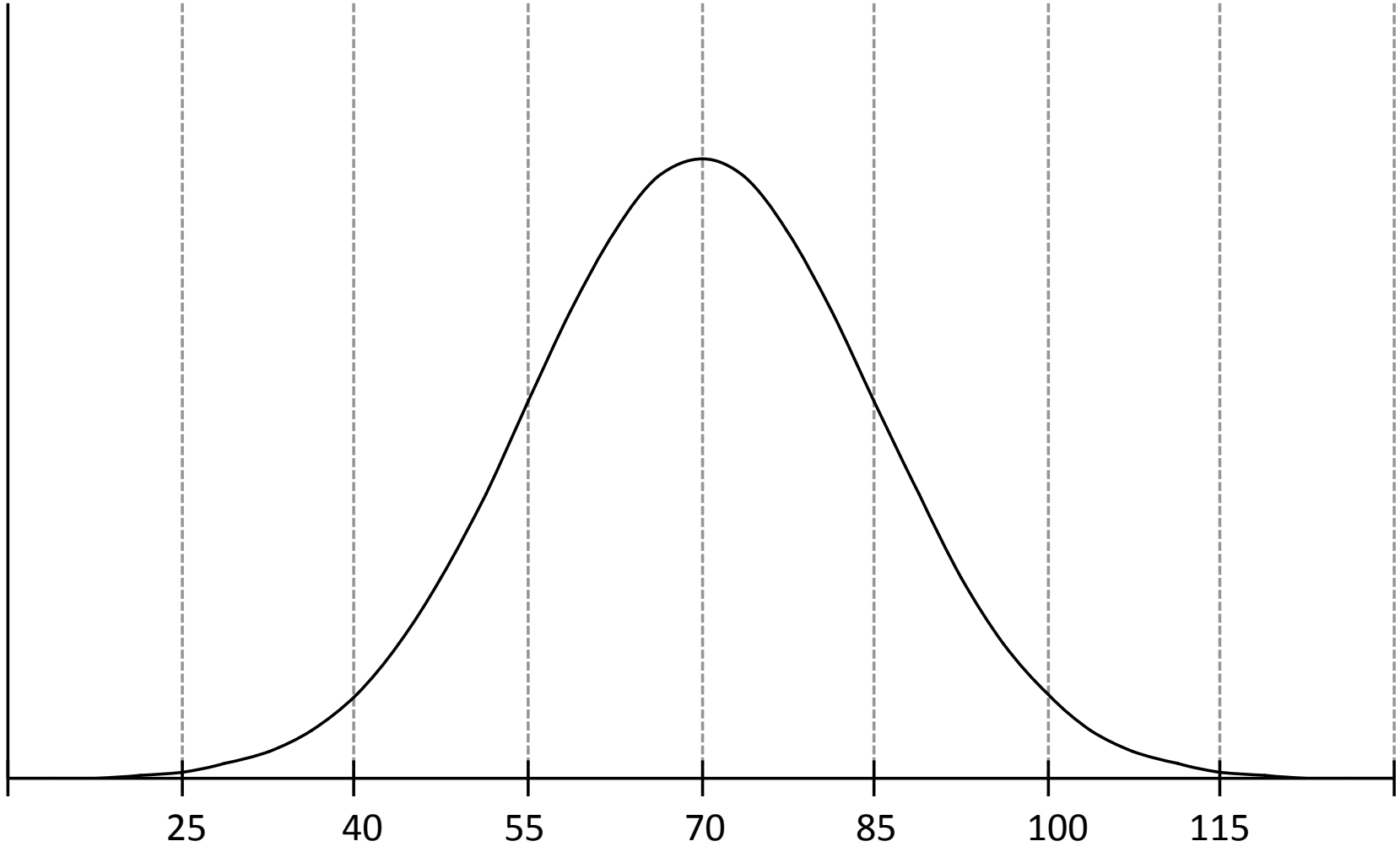
What is the standard deviation?

- Sample data of 20 scores {31, 23, 34, 38, 27, 34, 36, 22, 23, 33, 29, 33, 34, 34, 36, 33, 36, 24, 30, 29}

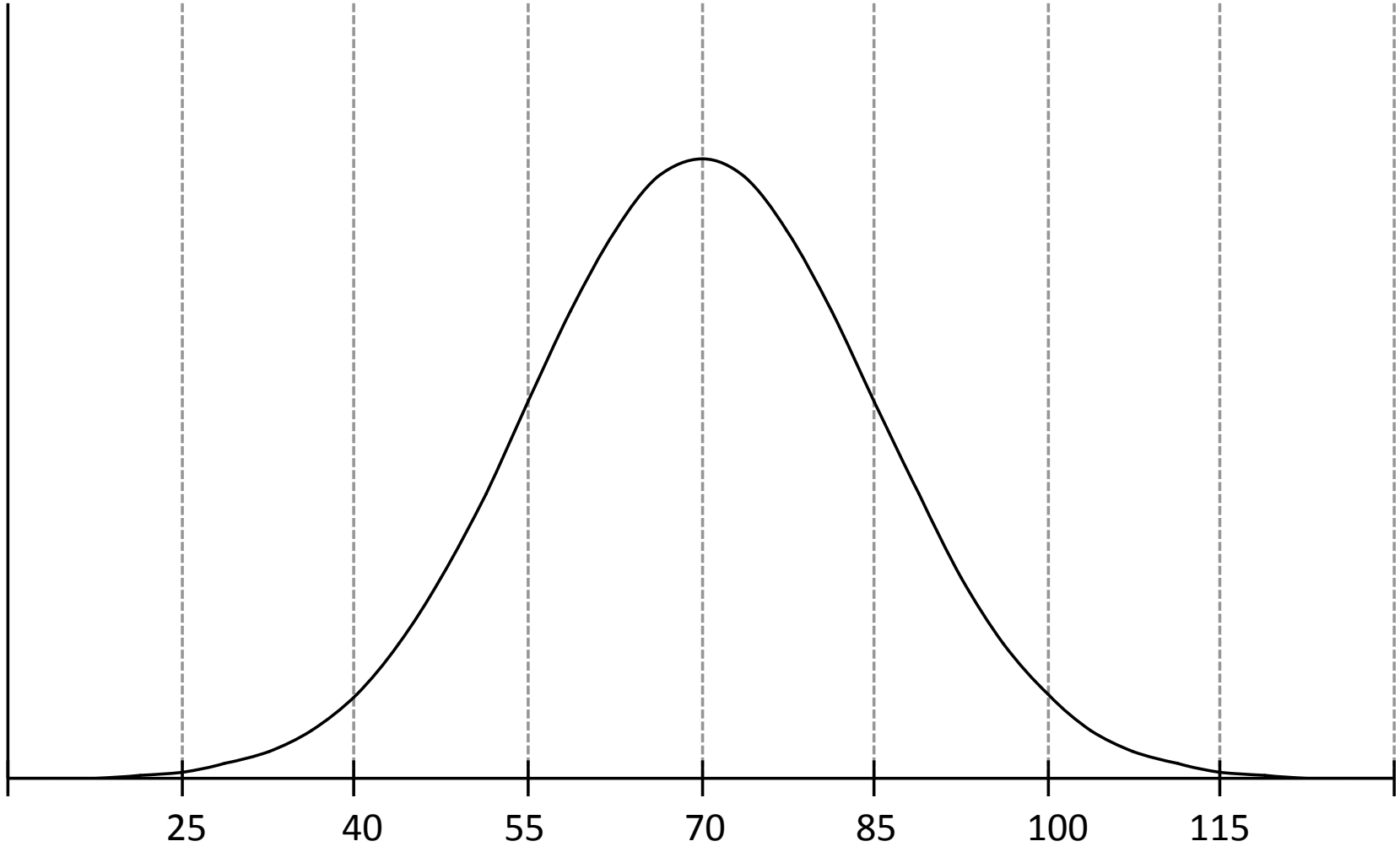
Example Exercises

Normal Distribution

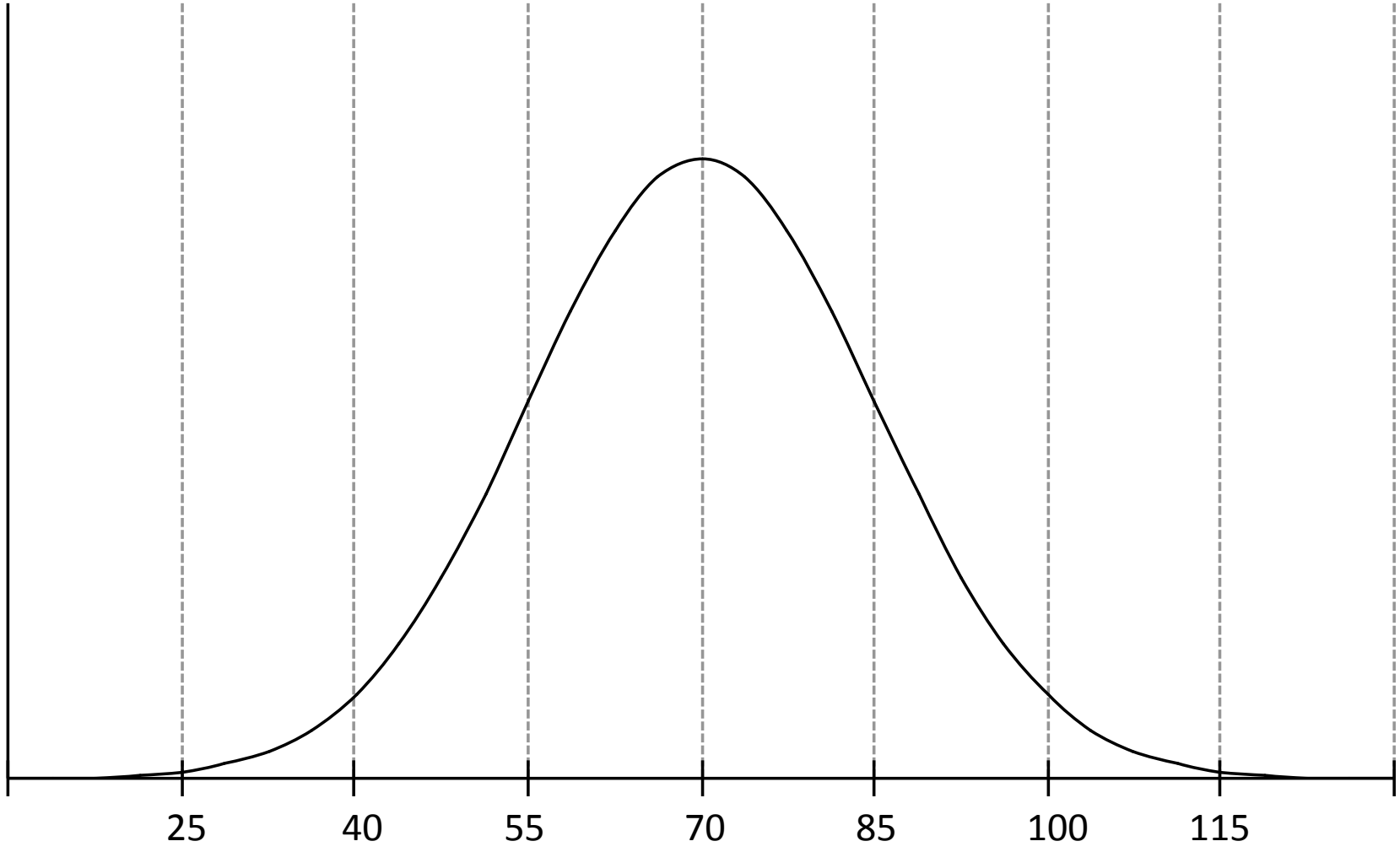
Normal Distribution



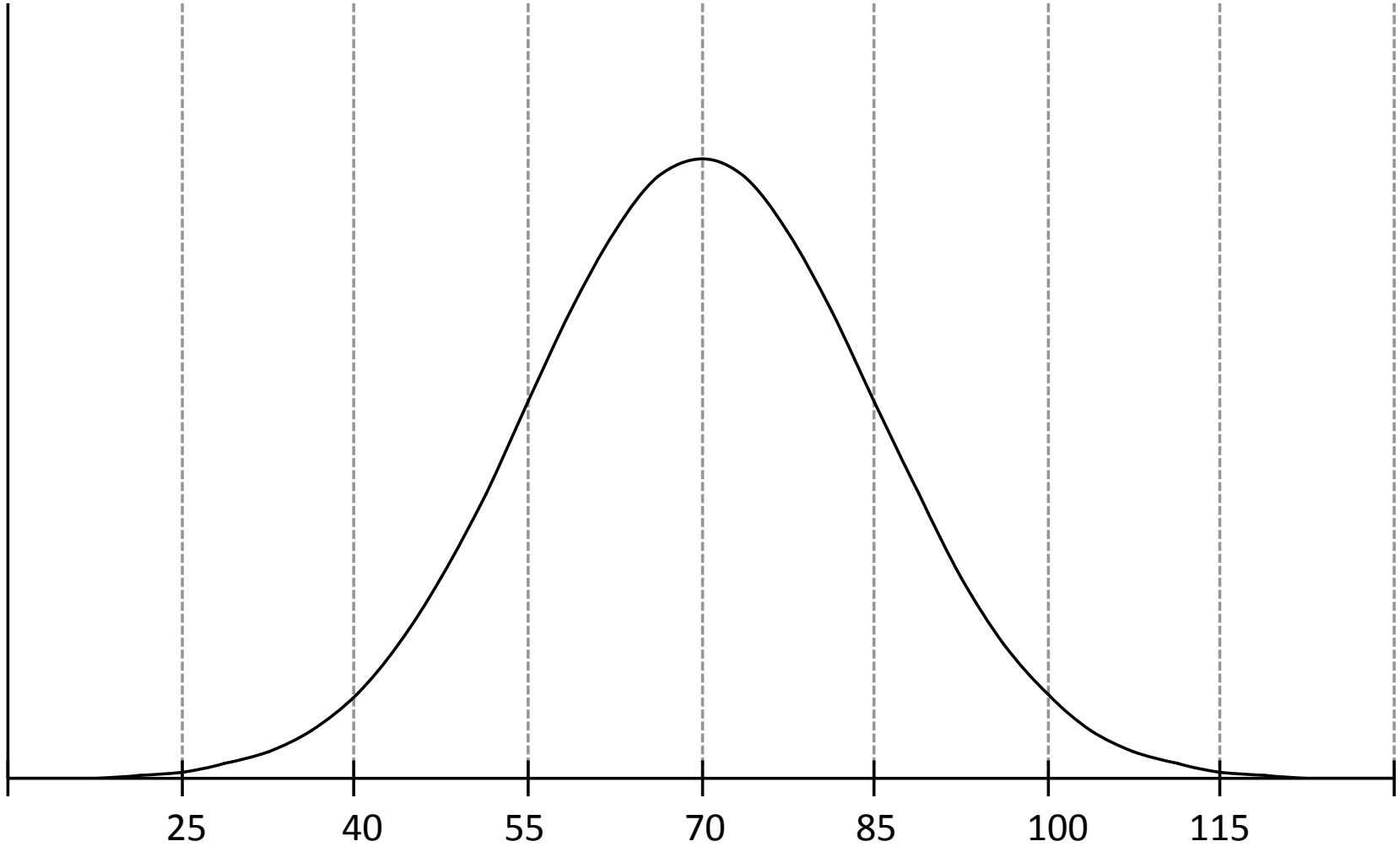
What is the mean and standard deviation?



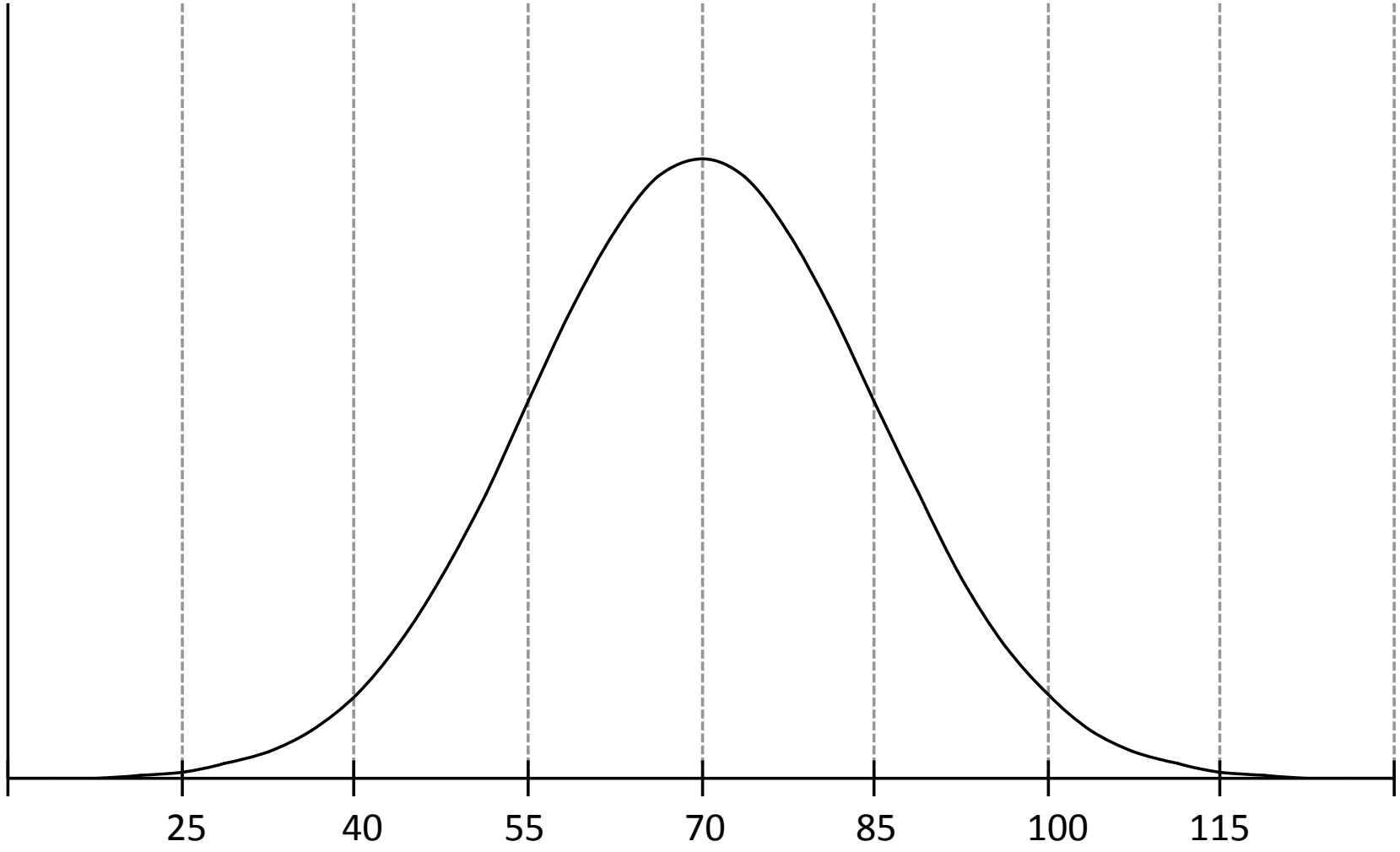
What proportion of respondents had scores that fell between 55 and 85?



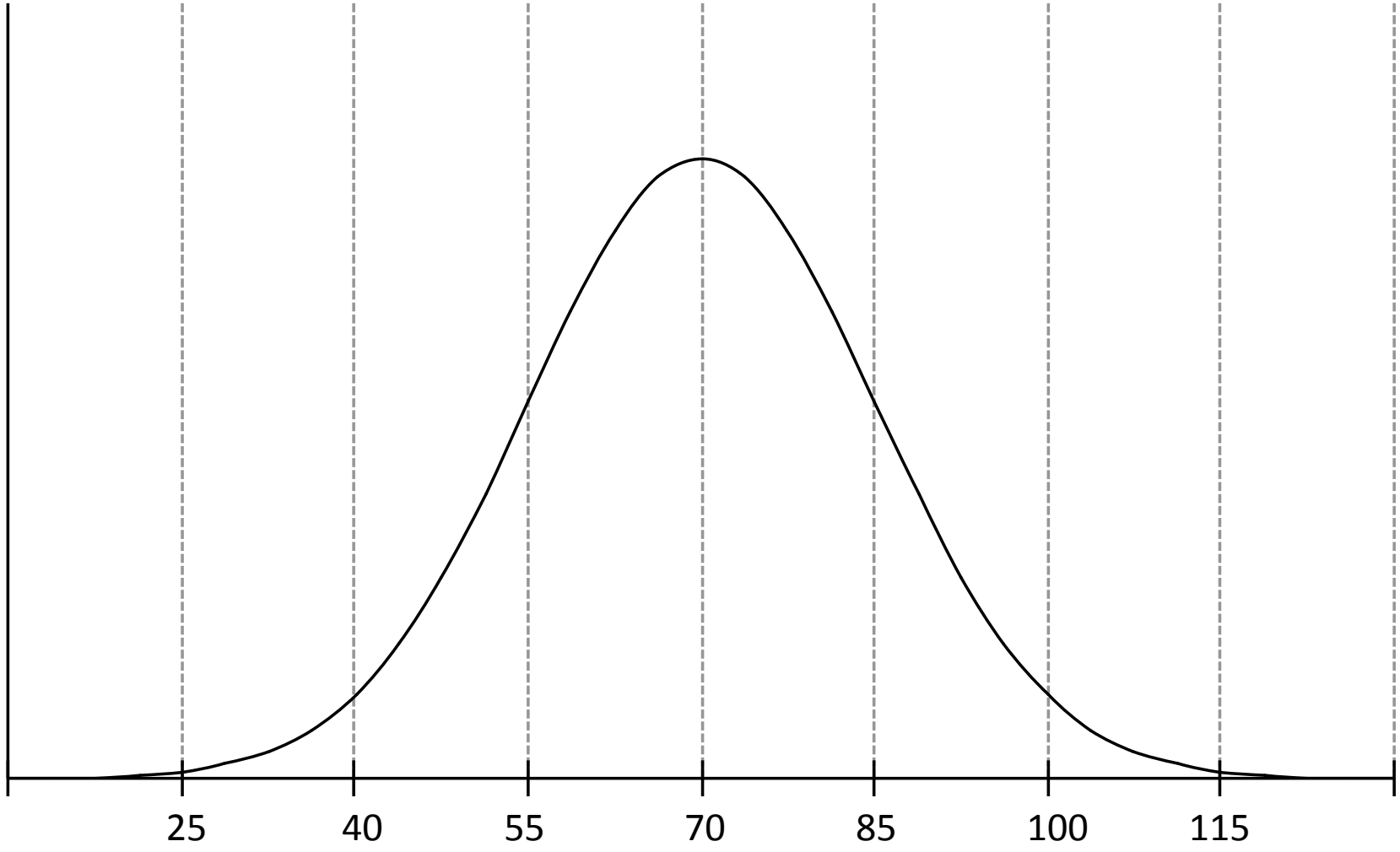
What proportion of respondents had scores that fell between 40 and 100?



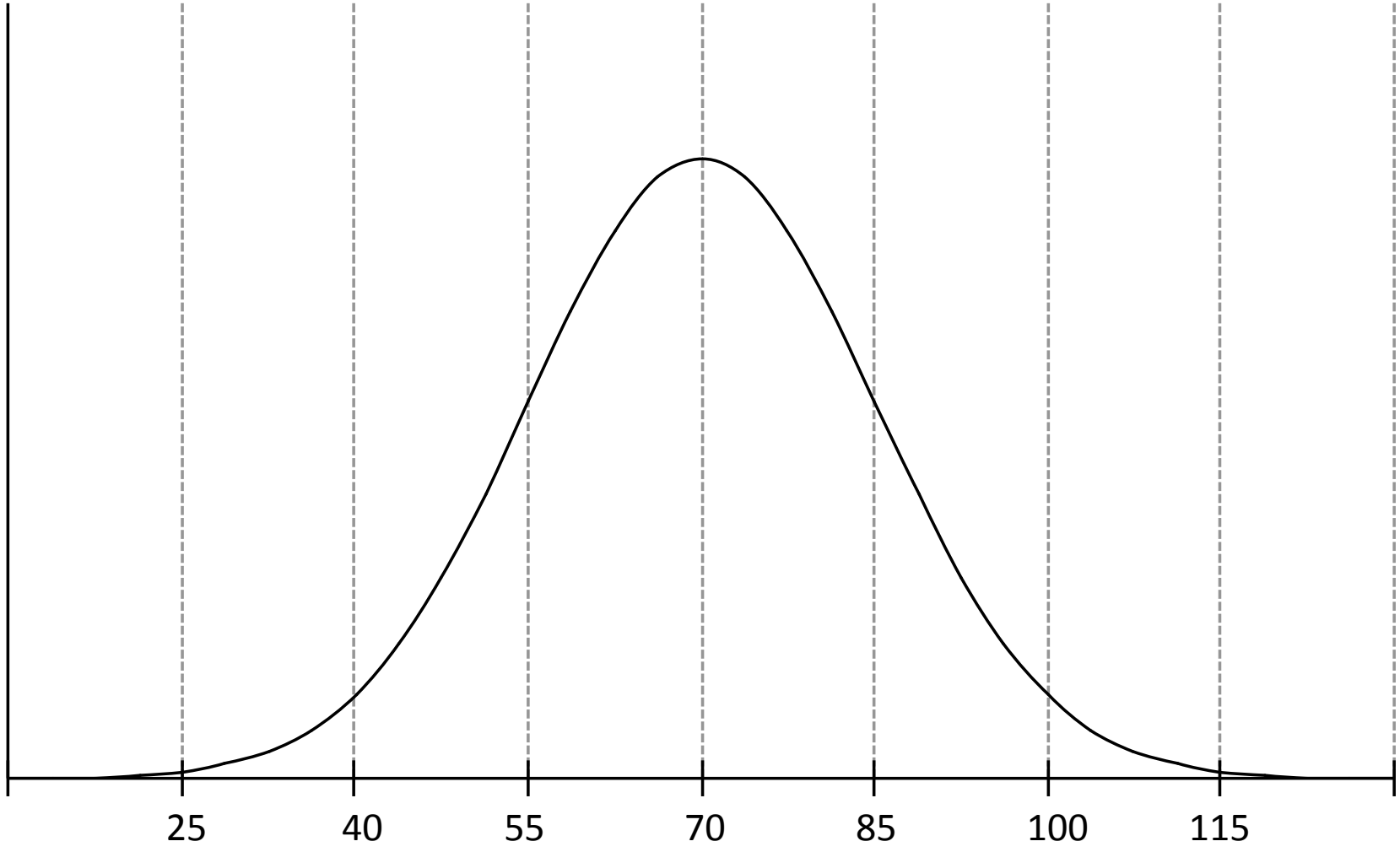
What proportion of respondents had scores that fell between 85 and 115?



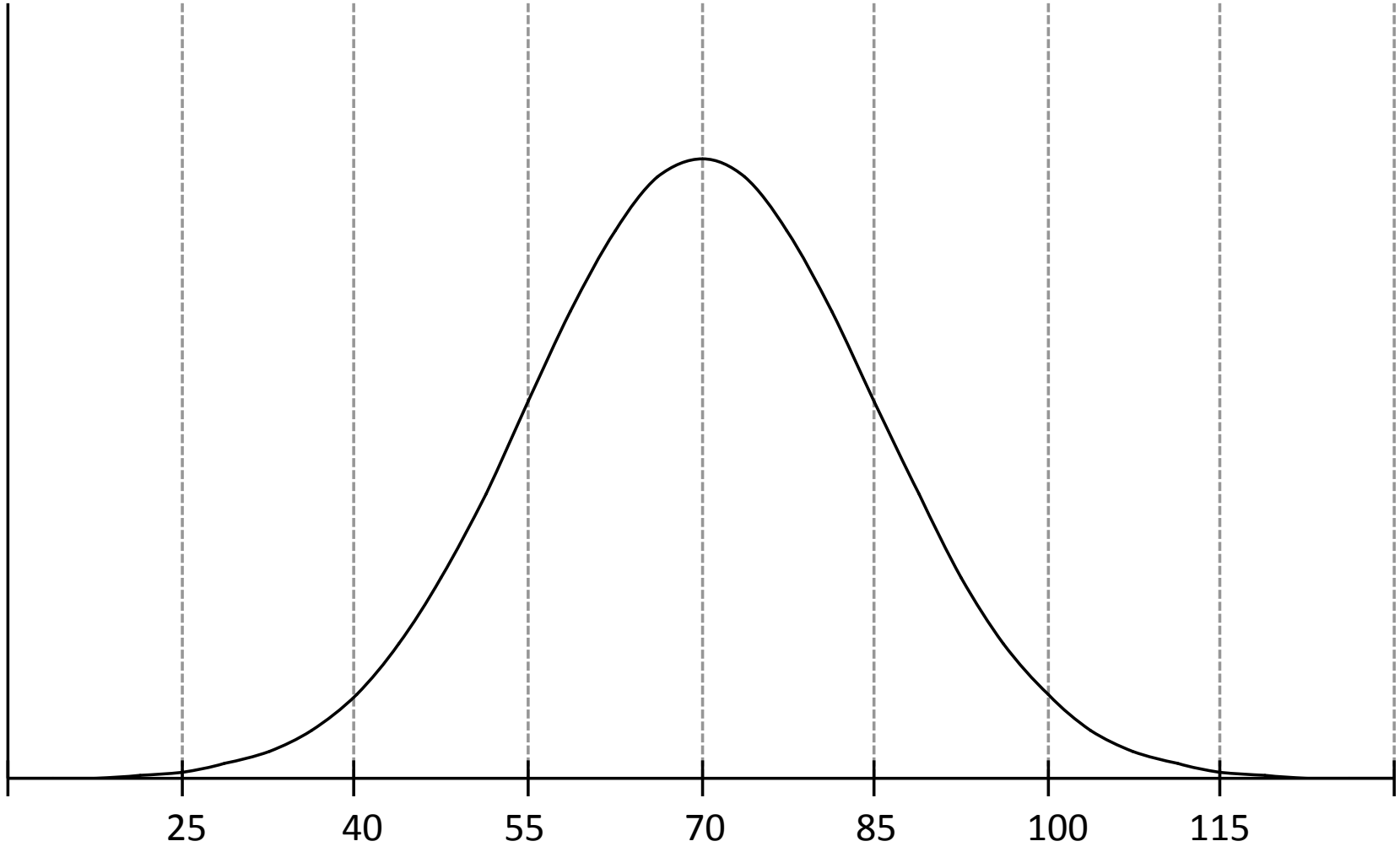
What proportion of respondents scored below 90?



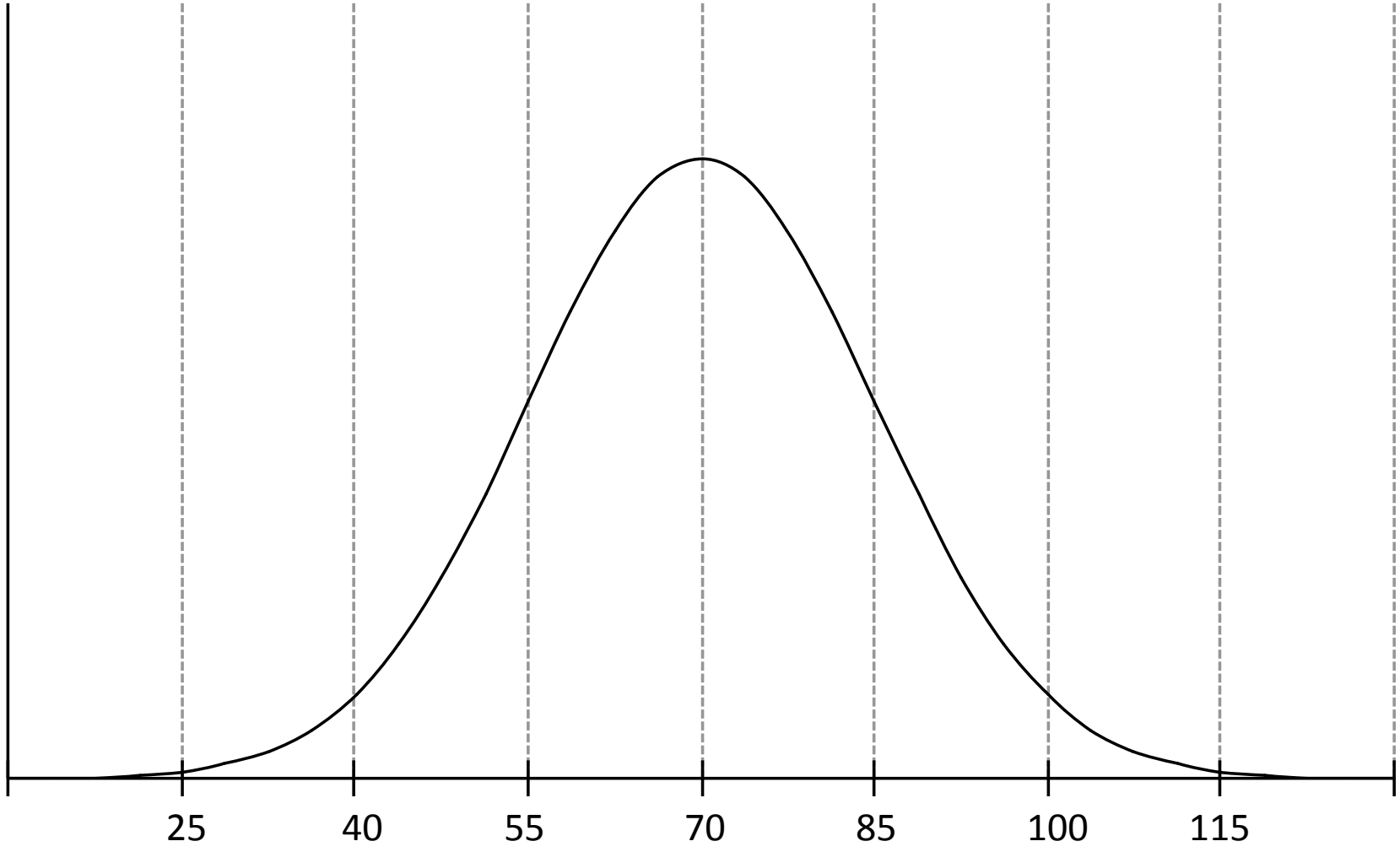
What proportion of respondents scored above 60?



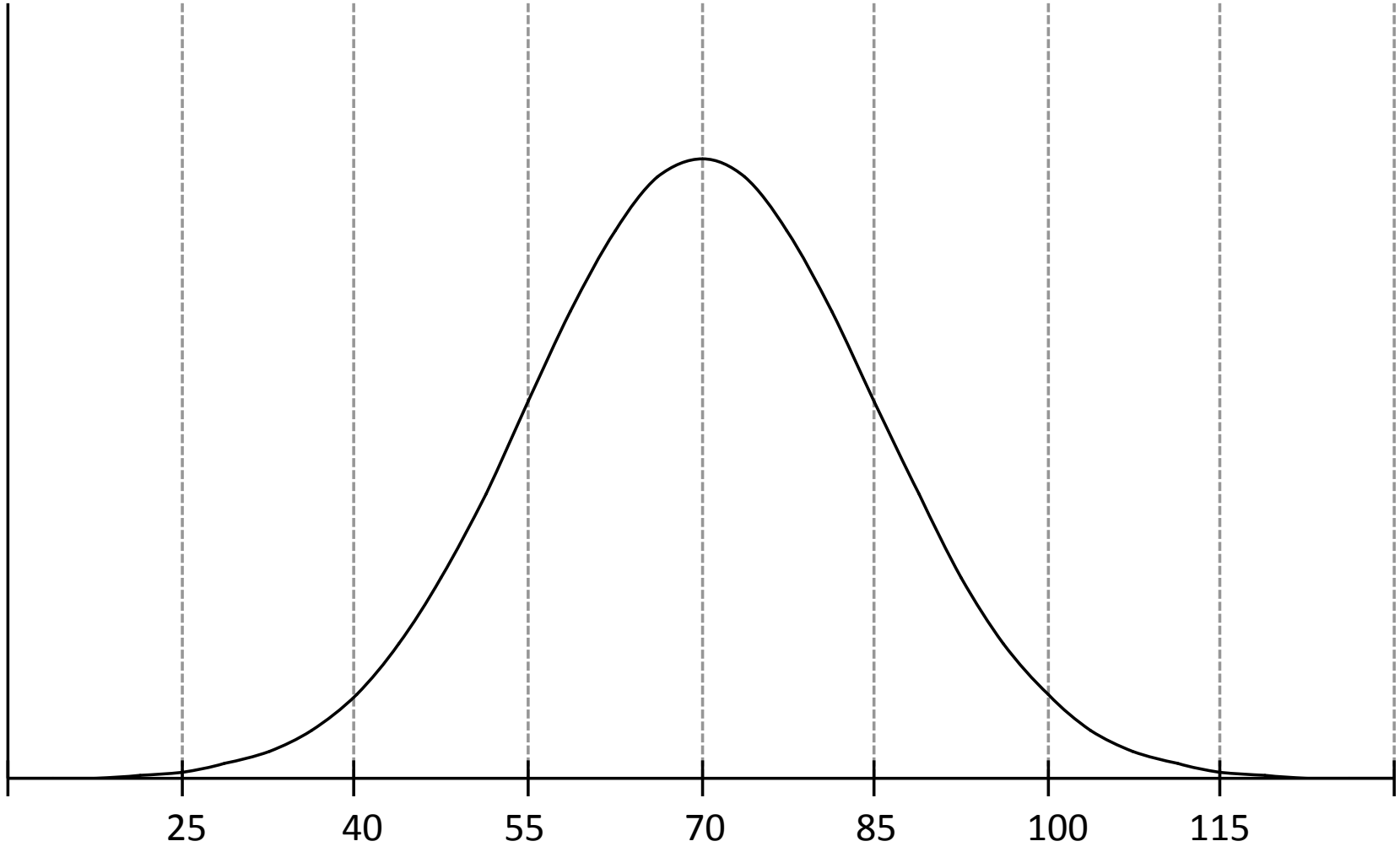
What proportion of respondents scored between 50 and 80?



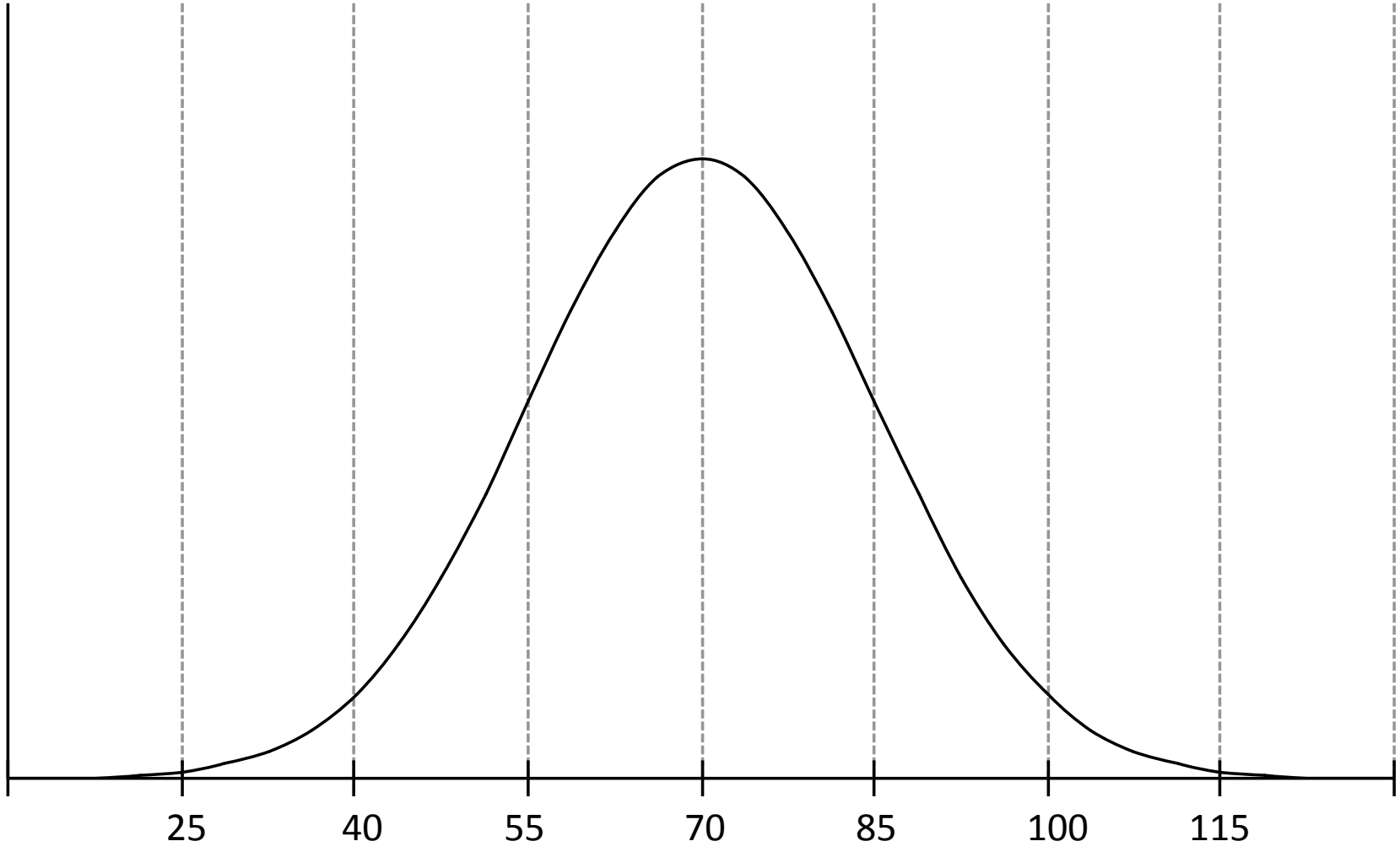
What proportion of respondents scored between 90 and 110?



What score had 75% of the respondents below it?



What score had 20% of the respondents above it?



Example Exercises

Probability

I got a lot of these problems from:

http://www.mathgoodies.com/lessons/vol6/challenge_vol6.html

A large basket of fruit contains 3 oranges, 2 apples and 5 bananas. If a piece of fruit is chosen at random, what is the probability of getting an orange or a banana?

A pair of dice are rolled. What is the probability of getting a sum of 2?

In the United States, 43% of people wear a seat belt while driving. If two people are chosen at random, what is the probability that both of them wear a seat belt?

A city survey found that 47% of teenagers have a part time job. The same survey found that 78% plan to attend college. If a teenager is chosen at random, what is the probability that the teenager has a part time job and plans to attend college?

In a shipment of 100 televisions, 6 are defective. If a person buys two televisions from that shipment, what is the probability that both are defective?

Three cards are chosen at random from a deck without replacement. What is the probability of getting a jack, a ten and a nine in order?

Three cards are chosen at random from a deck without replacement. What is the probability of getting a jack, a ten and a nine in ANY order?

Advanced Question

Suppose you must choose between two products to sell in your shop. Your choice depends on what the economy is going to do. If the economy goes up, you will make a profit of $100,000 on (product A) or $60,000 on (product B). If the economy stays the same, you will earn a profit of $50,000 on (product A) and $40,000 on (product B). And if the economy goes down, you will lose $20,000 on (product A) but can still earn $10,000 on (product B).

You don't know for sure what the economy is going to do, but you might know the probabilities of these things happening. Suppose the probability of the economy going up is .4, the probability of it staying the same is .4, and the probability of it going down is .2.

Determine the expected profit for each product. Which product would you choose and WHY?