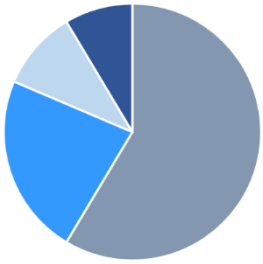
SHL Numerical Test Guide

About the test:

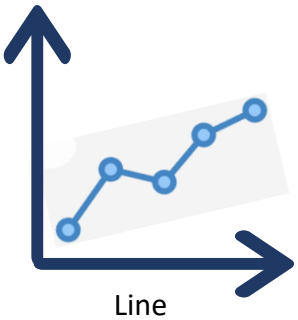
At the start of the test you will be presented with a short video presenting the different types of exam questions with instructions on how to answer them. The purpose of the test is to examine your math skills and your ability to understand how numerical data can be presented in form of a graph and the relation between tables and charts. In order to present the information in a graphic way, it is often necessary to use math skills like addition, subtraction, multiplication and division. Higher level topics are percentages and averages.

In the real test you are required to create graphs according to given information. There are different types of graphs:

Column



Pie



Line

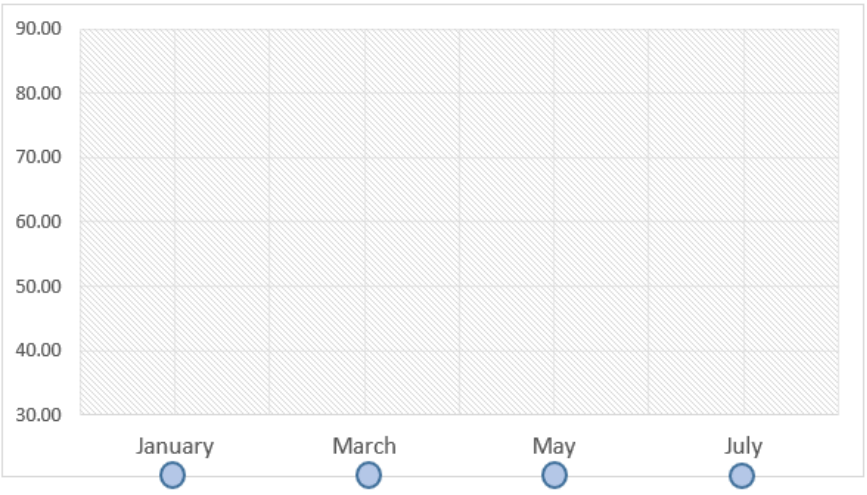
Numerical Reasoning:

1. Line Chart – Sample question:

Harry receives water bill every 2 months.

Month	Cost	Water Gallons
January	$ 75.05	150
March	$ 93.50	112
May	$ 65.02	100
July	$ 21.00	50

Graph the water rates (cents per gallon) for each month.



How to answer this type of questions:

You need to draw a graph according to the information in the table and find the cost of a gallon of water in cents. The real test is interactive, so the drawing of the graph is done by dragging dots from the bottom of the graph, to the place they should be according to the correct answer. In the table, the cost of water gallons is in dollars, and you are asked about the cost in cents. To answer the question, you need to turn the dollars to cents by multiplying the number by 100, because there are 100 cents in a dollar.

75.05 * 100 = 7,505 → 75.05 dollars are 7,505 cents.

93.50 * 100 = 9,350 → 93.50 dollars are 9,350 cents.

65.02 * 100 = 6,502 → 65.02 dollars are 6,502 cents.

21.00 * 100 = 2,100 → 21.00 dollars are 2,100 cents.

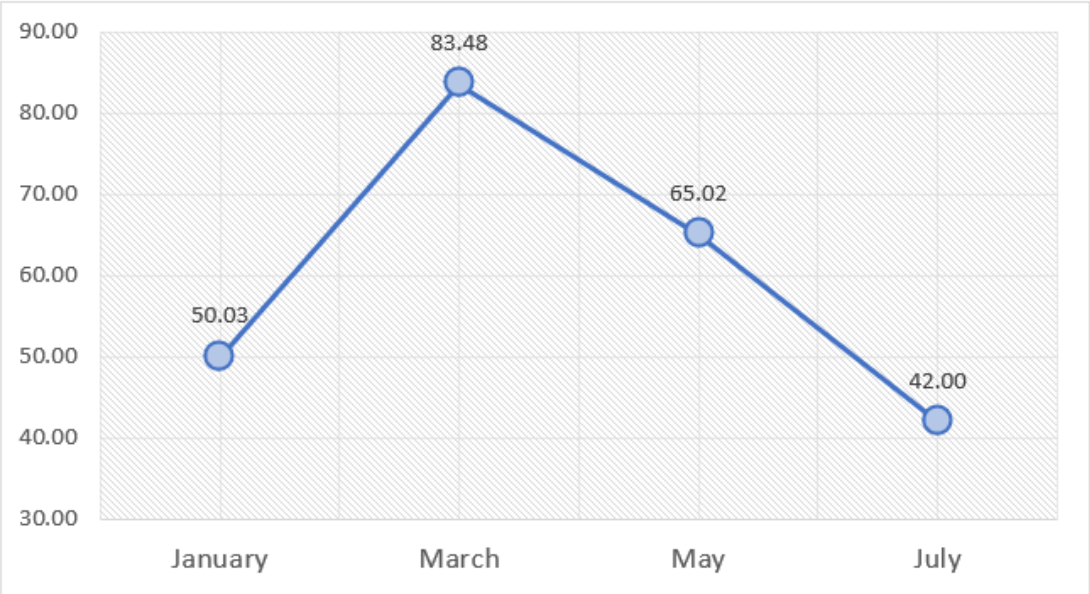
Now that you know that cost of water gallons in cents, you can find the cost of a single gallon by dividing the cost in the number of gallons.

January: 7,500/150 = **50.03**

March: 9,350/112 = **83.48**

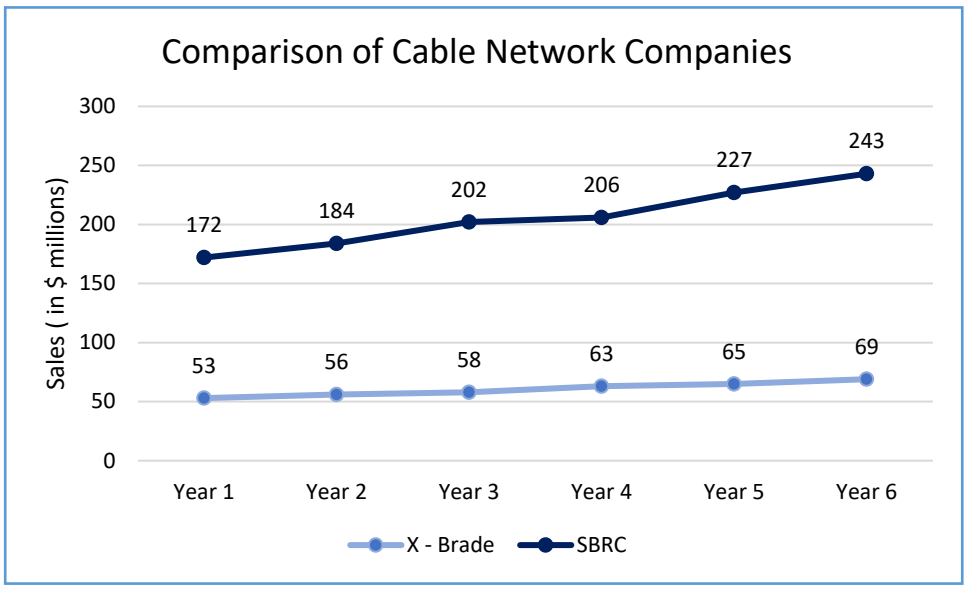
May: 6,502/100 = **65.02**

July: 2,100/50 = **42.00**



In this PrepPack, there are different types of questions that by practicing them you can improve your math abilities and have a better understanding of how a chart represents data in the form of table or as a word problem.

A sample question from this PrepPack:



What percentage of the revenue in years 2 and 3 is X-Brade responsible for?

A) 21.9 %

B) 22.8 %

C) 23.4 %

D) 25.2 %

E) 26.7 %

The correct answer is (B) - 22.8%.

In this question, you first need to find the revenue made by both companies in years 2 and 3 to calculate the sum of revenues made.

X-Brade's revenue: 56 + 58 = 114

SBRC's revenue: 184 + 202 = 386

Total revenue: 114 + 386 = **500**

Next, you need to calculate the portion, in percentage, X-Brade is responsible for out of that sum. To do that, use the formula: **% = (Part/Total)*100**

Therefore, **X-Brade's percentage is:** (114 / 500)*100 = 0.228*100 = **22.8%.**

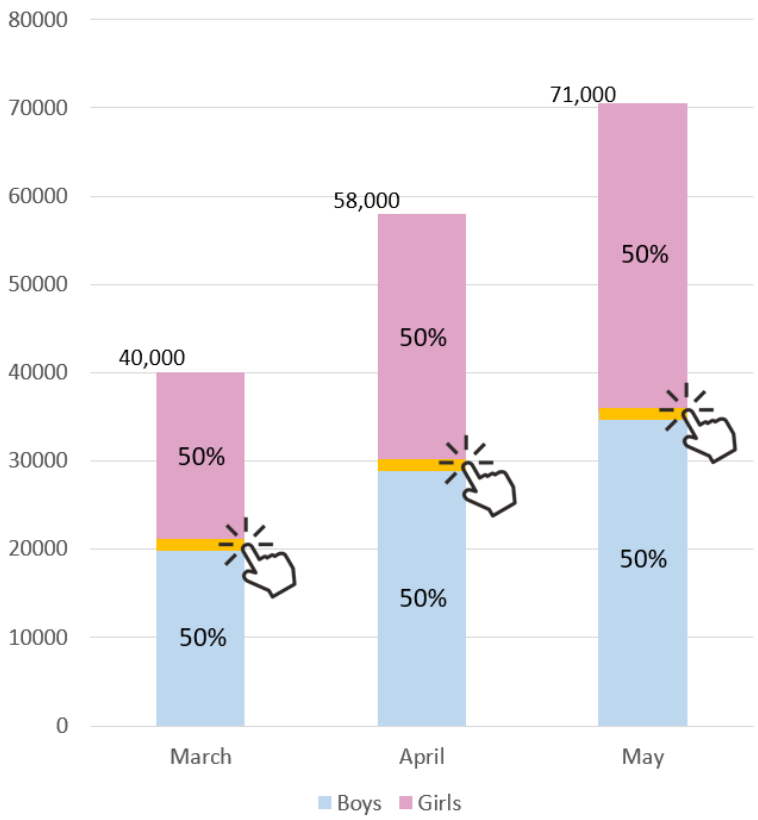
Note: Since you need to calculate a percentage, rather than an absolute number, you can omit the millions from the calculation.

2. Column Chart – Sample Question

Number of Births:

- Of the 40,000 babies that were born on March, there were 27,000 girls.
- On April, 18,000 more babies were born than March. 26,000 of them are boys.
- On May, 71,000 babies were born. The number of baby girls dropped by 2000 compared to March.

Arrange the boys and girls percentages across the 3 months.



How to solve this type of questions:

You need to create a column chart according to the given information. Then you need to find the percentage of boys and girls in each month and change the columns

so they would represent the data correctly, by dragging the line that separate each column into two groups.

You will also need to calculate the percentage of boys and girls in each month. To do that, use the formula: **% = (Part/Total) * 100**

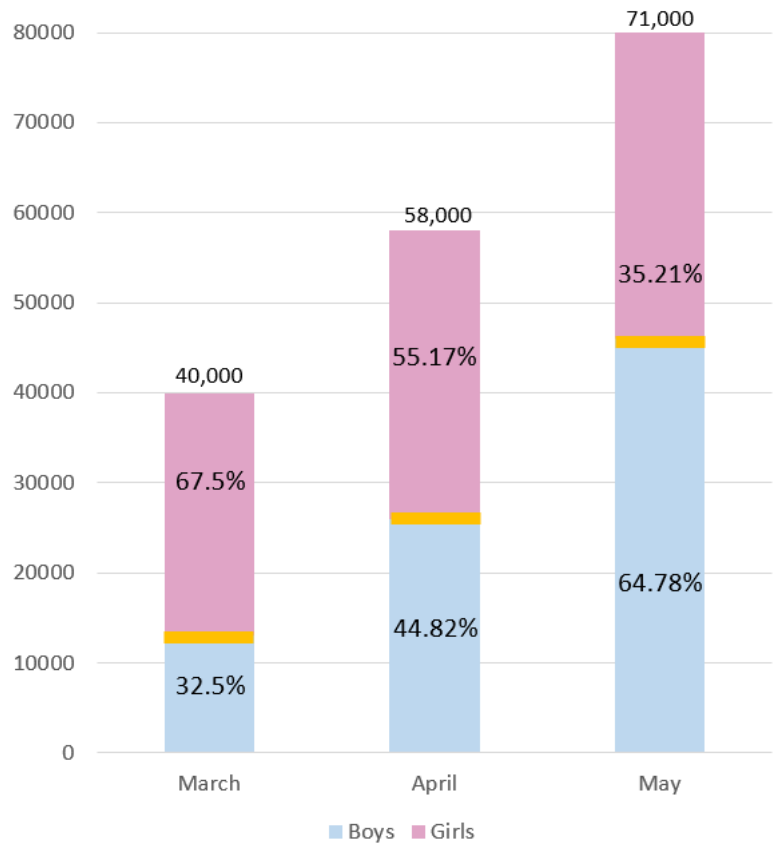
March: 27,000/40,000 * 100 = **67.5 % Girls**

April: 40,000+18,000= 58,000

26,000/58,000 * 100 = **44.82 % Boys**

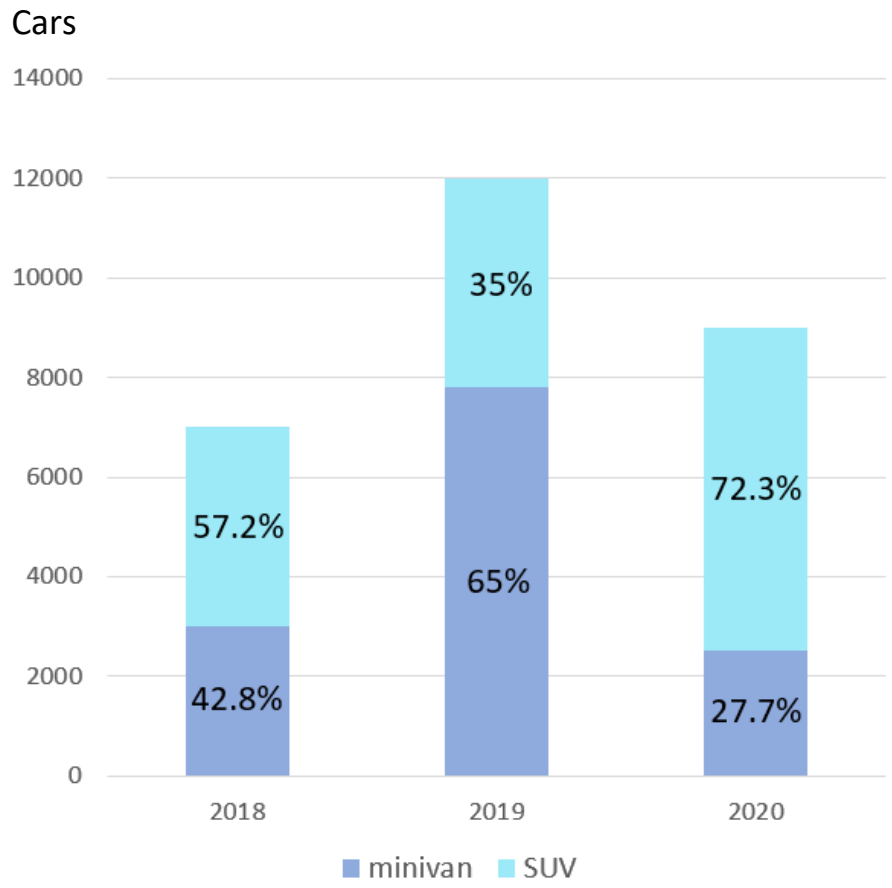
May: (27,000-2000)/71,000 * 100 = **35.21% Girls**

This is how the columns should look like when they represent the data correctly. The size of each group represents its percentage. The pink part represents the girls' group and the blue part represents the boys' group.



A sample question from this PrepPack:

Sea delivery per large family car (either SUV or minivan) costs $25. 12,000 large family cars were delivered by sea in 2019. What were the sea delivery costs for minivans in 2019?



A) $ 300,000

B) $ 7800

C) $ 105,000

D) $ 195,000

The correct answer is (D).

In 2019, 12,000 large cars were delivered. According to the graph, 65% of them were minivans. In order to calculate how many minivans were delivered use the formula:

(12,000 * 65)/ 100 = **7800**

7800 minivans were delivered. Sea delivery per large family car costs $25 so you need to multiply the number of cars in the delivery cost for one car.

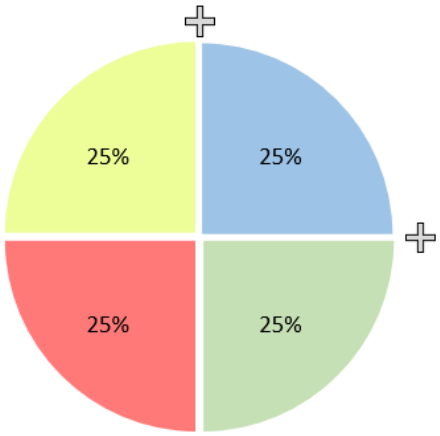
7800*25= $195,000

3. Pie Chart – Sample Question:

According to the given information in the table below, adjust the pie chart to represent the number of apartments of each apartment type.

There are 120 apartments in a building

3-Bedroom Apartment 18 Apartments	**5-Bedroom Apartment** Equal to the number of 2-bedroom apartment
2-Bedroom Apartment Double the number of 3-bedroom apartment	**1-Bedroom Apartment**



How to answer this type of questions:

The real test is interactive. By dragging the plus sign, you can change the parts of the pie so they would correctly represent the percentage of each apartment type. You need to find the number of apartments of each type and then convert it into percentage.

There are **18** 3-bedroom apartments. The number of 2-bedroom apartment is double the number of 3-bedroom apartment: 18 * 2 = **36**.

The number of 5-bedroom apartments is equal to the number of 3-bedroom apartment – **36**.

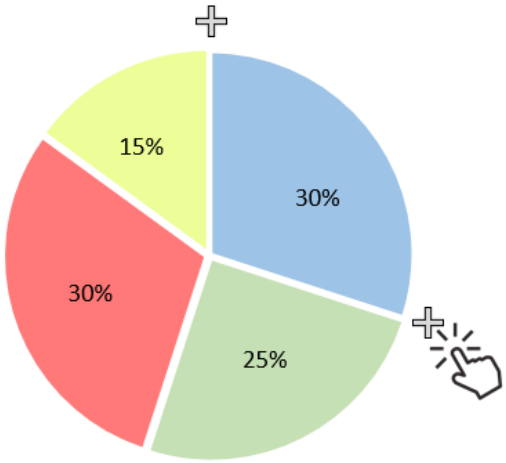
There is no information regarding the number of 1-bedroom apartments, but you know there are 120 apartments in the building, so you can then calculate the number of 1-bedroom apartments: 120-18-36-36= **30**.

You can then calculate the percentage of each apartment type by using the formula: **number of apartments / total number of apartments * 100**

3-bedroom apartments: 18 / 120 * 100 = **15%**

2 and 5-bedroom apartments: 36 / 120 * 100 = **30%**

1-bedroom apartments: 30 / 120 * 100 = **25%**

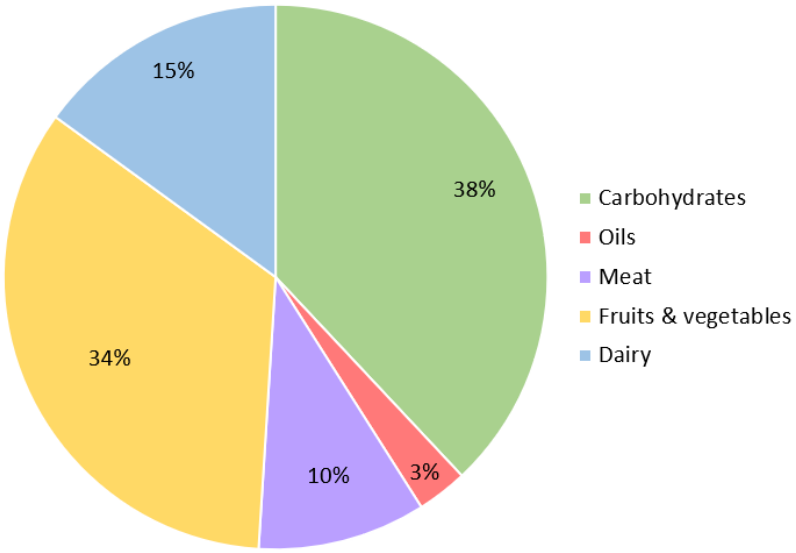


Please note that in this type of questions, when you are asked about percentage, it is a common mistake to give an answer in absolute numbers. Make sure that after you make calculations, you also change the pie according to the percentage value and not the absolute numbers.

Sample question from this PrepPack:

Daily Calorie Intake by Food Groups

(% Daily intake is based on a 2000 calorie diet)



What is the daily calorie intake of Oils?

A) 6

B) 60

C) 600

D) 90

E) 900

The correct answer is (B)

Oils amount to 3% of the total daily calorie intake (100%). Since the total daily calorie intake is known- 2000 calories, then we can calculate the exact amount of calorie intake of Oils:

3 * 2000 / 100= **60 calories per day**.

Numerical calculation

In the Numerical Calculation part of the test there are questions that assess your ability to perform calculations and identify errors in calculation. The questions are simple and measure your basic math skills. You need to pay attention to details and work fast and accurately.

Sample Question:

Tickets to the Museum

Age	Price
elderly (70+)	$ 12
Adult	$ 20
Child	$ 8
Baby	free

A group of visitors buy tickets to the museum. The group consists of 12 children, 3 elderly, 8 adults and 4 babies. They pay together 290 $. Decide if they payed the correct amount of money.

Correct Incorrect

How to answer this type of questions:

The answer is Incorrect.

In order to answer this question, you need to calculate the tickets price for every age group and then sum up the prices of all the age groups together.

12 children- according to the table, a ticket for a child costs $8.

12 tickets cost: 12 * 8 = **$96**

3 elderly – according to the table, a ticket for an elderly costs $12.

3 tickets cost: 3 * 12 =**$ 36**

8 adults – according to the table, a ticket for an adult costs $20.

8 tickets cost: 8 * 20 = **$160**

4 babies- according to the table, tickets for babies are free.

The price for all the tickets is: 96 + 36 + 160 = **292.**

The group didn't pay the correct amount of money.

Sample question from this PrepPack:

Three students went out for lunch in a restaurant. Sophie ordered the business special for $8.50. Lauren ordered a full meal with dessert for $10.25. Mike ordered a drink for $2.25. The three of them split the check equally. Which of the following is the amount each of them paid?

A) 4.5
B) 6
C) 6.66
D) 7

The correct answer is (D).

They split the check equally, hence a simple average will give the answer:

(8.5 + 10.25 + 2.25) / 3 =

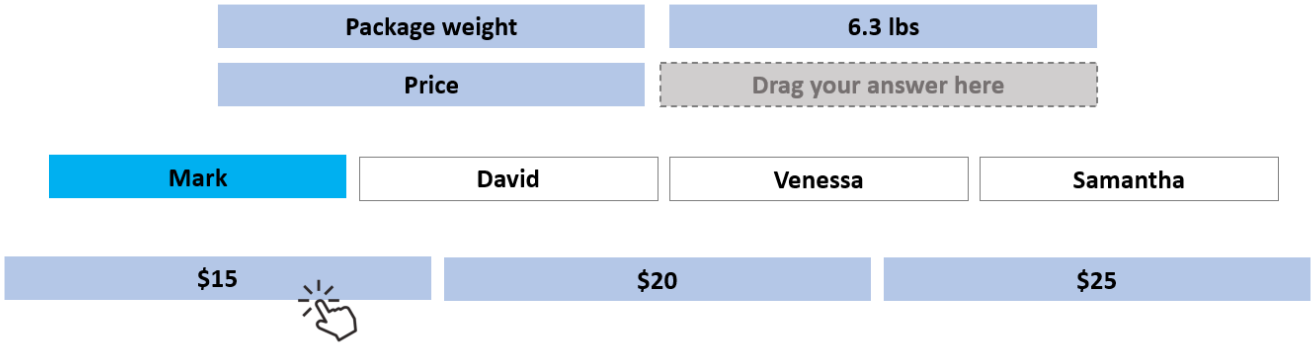
21 / 3 = **7**

Numbers Range

In this type of questions, you need to sort items by different numbers range. Here is an example question that would help you understand what to expect for in the real test.

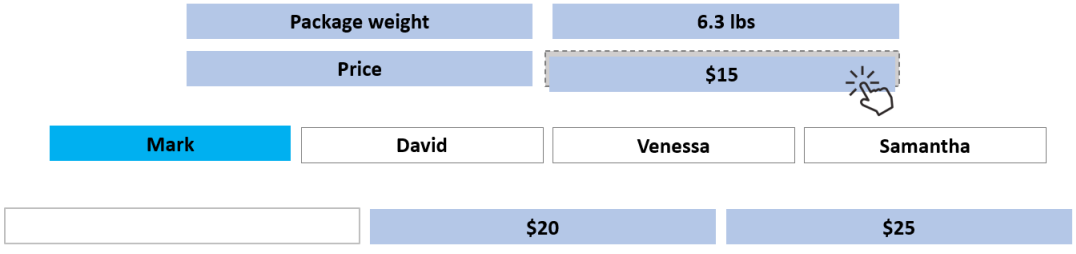
Sample Question:

Information:
In a local post office, the price of package delivery is determined by its weight. The prices are:
$15 for sending a package that weighs 4.5 – 8 lbs.
$20 for sending a package that weighs 8.1 – 12.5 lbs.
$25 for sending a package that weighs 12.6 – 15 lbs.
select the price that each person need to pay according to the weight of his package.



How to answer this question:

You need to select the price Mark has to pay for the delivery of his package that weighs 6.3 lbs. His package is in the first price range of 4.5 – 8 lbs and costs $15 to deliver. Answer by dragging the correct answer to the designated cell.



Note that in different questions the range may not have lower or upper limit. For example, a given range can be “10 or higher”. This range contains every number that is bigger than 10.