

Week 1: Thinking Skills Homework

Relevant Selection & Finding Similarity

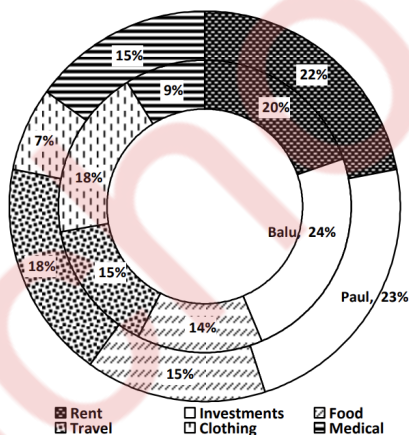
1. The pie chart shows the favourite soft drinks based on a survey from a sample of Scholarly students.



Which one of the rows in the table below correctly represents the number of students who chose each flavour?

	Fanta	Coca-Cola	Mountain Dew	Pepsi Max	Creaming Soda
A	28	15	44	42	60
B	33	77	31	55	29
C	32	83	40	43	20
D	23	25	35	45	40

2. The figure below illustrates the expenditures of Paul and Balu per week, as percentages of their respective incomes.



If Paul's income is double of Balu's, who spends the most on a particular category?

- Paul, Medical
- Balu, Medical
- Paul, Investments
- Balu, Investments

3. Questions 3-4 is based on the following information regarding COVID-19 tests.

Ashley is curious about the accuracy of different COVID-19 tests. There are two main types; PCR and rapid antigen test via nasal swab. Ashley looked at a study involving 20,000 people, of some whom are infected and some whom aren't. 10,000 people were given the PCR test, whilst 10,000 people were given the rapid antigen (nasal swab) test.

If the test result is positive, it means that the test indicated that the person had the disease. If the test result is negative, the test indicated that the person did not have the disease. In the

Findings of the PCR test

	Actually infected	Actually not infected
Positive test result	500	400
Negative test result	100	9000

Findings of the Antigen test (Nasal swab)

	Actually infected	Actually not infected
Positive test result	600	560
Negative test result	140	8700

How many results were correct for the PCR test?

- A. 500
- B. 600
- C. 9300
- D. 9500

4. Which COVID-19 test is more accurate?

- A. PCR test
- B. Antigen test
- C. Both tests are equally accurate
- D. Inadequate information

5. Fizer Inc. recently developed a new rapid antigen test for the Pizzazovirus. To assess the new test's accuracy, they conducted a study involving 200 people, some of whom are infected and some whom aren't. If the test result is positive, it means that the test indicated that the person had the disease. If the test result is negative, the test indicated that the person did not have the disease.

The table below illustrates the findings of the study.

	Actually infected	Actually not infected
Positive test result	80	20
Negative test result	30	70

What is the accuracy rate of the test?

- A. 25%
 - B. 45%
 - C. 55%
 - D. 75%
6. Jeffrey, a professional bodybuilder, bought a 1kg bag of his favourite berries & cream flavoured protein powder. He mixes it with milk to make a protein shake.

The protein label states the following:

Nutritional Info	Per 100g dry powder	Per 20 g serving (with 200ml milk)
Energy (kJ)	1300	700
Protein (g)	75	38
Carbohydrate (g)	5	2
Fat (g)	6	4

Jeffrey wants to consume 180g of protein per day. He has already consumed 35g of protein through his regular meals. If he wants to get his remaining protein intake from shakes, how many should he drink to hit daily target?

- A. 2
- B. 3
- C. 4
- D. 6

7. Four friends are competing in the Ironman triathlon, which consists of a 3.86 km swim, 180.25 km bike ride and 42.2 km run. The winner is the person who has the least total time over all three sections.

The table below shows the results for the swim and the bike ride.

Competitor	Swim	Bike Ride
Annika	1 hour 20 min 25 seconds	6 hours 23 min 38 seconds
Raymond	1 hour 23 min 15 seconds	6 hours 11 min 21 seconds
Manny	1 hour 19 min 22 seconds	6 hour 28 min 10 seconds
Jodie	1 hour 16 min 19 seconds	6 hours 30 min 4 seconds

One person will win if he or she is less than a certain number of seconds behind any other competitor in the last section, the run.

How many seconds is that?

- A. 4 seconds
- B. 29 seconds
- C. 31 seconds
- D. 33 seconds

8. Five prolific violinists competed in the Stradivarius Young Performers' Competition. The following scoring system was used for each event:

1st place	5 points
2nd place	3 points
3rd place	1 point
4th/5th place	0 points

Before each event started, each candidate nominated an event they wished to perform solo (without piano accompaniment)- this doubled the number of points gained in that event. The table below shows the results of each event and the violinists' final point scores:

Candidate	Baroque Music	Classical Music	19th Century Music	20th Century Music	Australian Music	Total points scored
Shirley	1st	2nd	1st	3rd	2nd	20
Jin	3rd	5th	3rd	5th	4th	3
Alexander	4th	1st	2nd	4th	3rd	14
Hanna	2nd	3rd	5th	2nd	5th	7
Eloise	5th	4th	4th	1st	1st	15

How many violinists won the section they have elected to play solo?

- A. 2
- B. 3
- C. 4
- D. 5

9. The prices for Jamberoo tickets are shown in the table below.

Pass for 1 day	Pass for 5 days (consecutive)	Pass for 7 days (consecutive)
\$50	\$170	\$230

Bianca plans on visiting these days of the month: 12,13,14,15,16,26,27,28,30

How much is the cheapest valid combination of tickets she can buy?

- A. \$400
- B. \$340
- C. \$380
- D. \$320

10. The following table shows the weekly Thinking Skills trial test scores (out of 40) of the top 5 Scholarly students.

	Test 1	Test 2	Test 3	Test 4
Royce	38	36	35	36
Wenona	36	39	36	37
Derrick	40	36	39	35
Meredith	39	37	37	35
Nathaniel	38	40	31	39

Steve will award a prize to the student with the highest total mark across 5 weeks. If two or more students are tied for the highest score, nobody gets the prize. As the scores currently stand, one student is able to be sure to win this prize as long as a high enough score is achieved in the final test.

What is the minimum score in the final test that will guarantee this student the prize?

- A. 37
- B. 38
- C. 39
- D. 40