

Mathematics

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(Chapter - 10) (How Quantities Combine: Understanding Data) (Assignment 3)

(Class - 9)

Name _____

Date _____

Answer all 15 questions. Choose one option for each MCQ. Show your working and give reasons where required.

Section A: Multiple Choice Questions

1. Calculate the concentration of spice mix in these two scenarios.

(ii) A 300 mL kashayam/kadha with 5% spice mix, a 200 mL one with 10% spice mix, and a 100 mL one with 15% spice mix are mixed.

- (a) 5% (b) $8\frac{1}{3}\%$
(c) 10% (d) $11\frac{2}{3}\%$

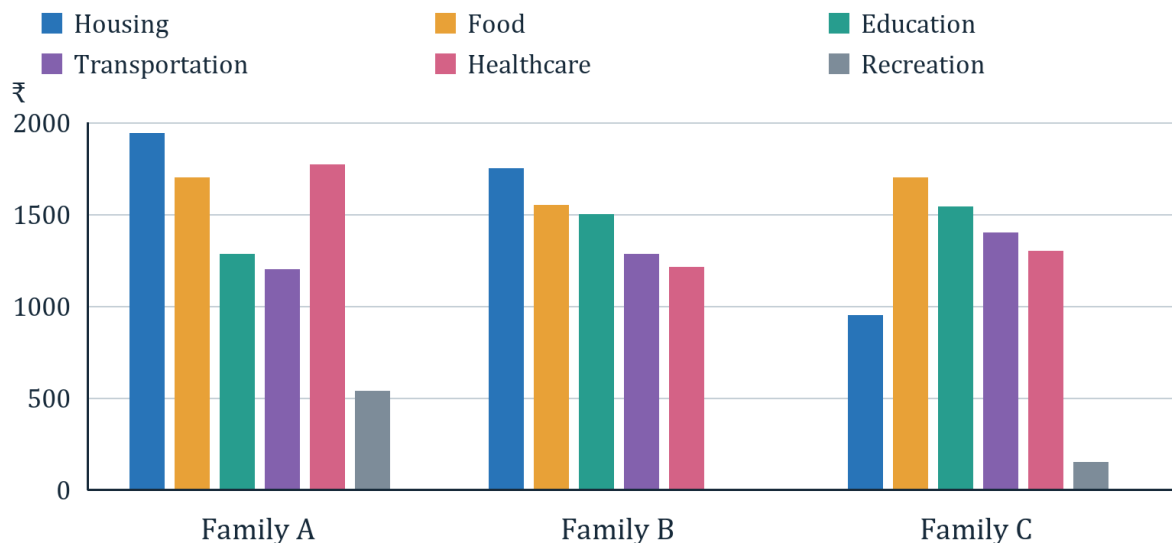
2. The following table shows the weight data of langurs in an animal facility. Without doing any computations, can you tell whether there are more male langurs or more female langurs? Or are they equal in number?

	Male langurs	Female langurs	All langurs
Average weight	16.5 kg	13.8 kg	14.925 kg
Number of langurs			60

- (a) More males (b) More females
(c) Equal numbers (d) Cannot be determined

3. Which category did Family B spend most on?

Category-wise expenditure of each family



- (a) Housing (b) Education
(c) Food (d) Transportation

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4. Rehmat's marks in Maths are as follows: 60% in internal tests, 64% in the project, 73% in the final exam. The annual percentage score is calculated by combining the internals, project, and final exam in the ratio 3 : 2 : 5. What is Rehmat's annual score in Maths?
- (a) 65.67% (b) 67.3%
(c) 69% (d) 73%
5. A mixture is formed from positive amounts of 4% and 10% salt solutions. Which concentration is impossible?
- (a) 5% (b) 7%
(c) 9% (d) 12%

Section B: Very Short Answer Questions

6. A white stork's migration is tracked. The average daily distance travelled, calculated over 20 days, is 44.5 km. On the 21st day, it flew 55 km. What is the average daily distance travelled over these 21 days? Make a guess before you calculate.

Answer:

7. Dorjee has collected 1 litre of water from the Dead Sea! Using the information in the table, answer the following questions. A calculator can be used if necessary.
- (i) What is the salinity of the mixture if he mixes 1 litre of water from the Dead Sea with 2 litres of purified drinking water?

Water source	Salinity
Dead Sea	$\approx 34\%$
Other seas and oceans	$\approx 3.5\%$
Ground water	$\approx 0.01\%$
Purified drinking water	$\approx 0.001\%$

Answer:

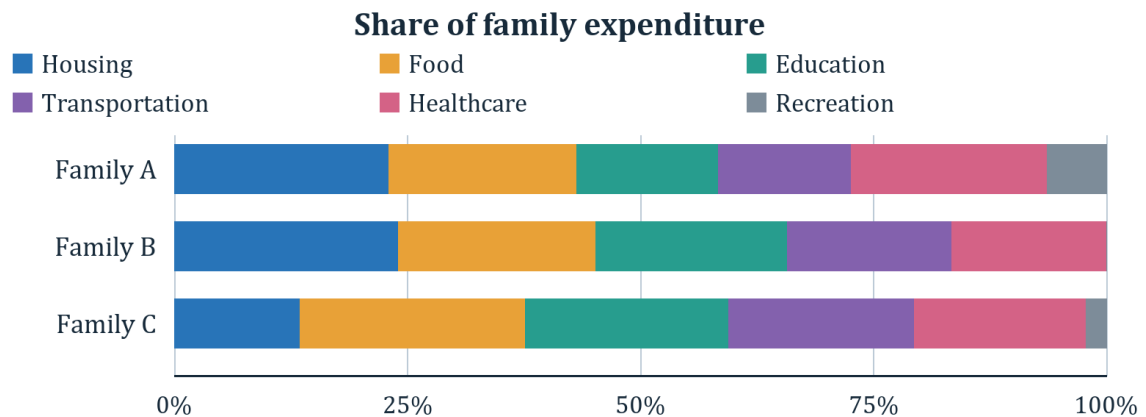
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8. Approximately what percentage of Family C's expenses were on housing?



Answer:

9. A triathlon is an endurance race consisting of swimming 3.8 km, cycling 180 km, and running 42.2 km. Athletes compete for the fastest overall time, completing each segment in that order. The following table shows the finish time of 3 athletes in each segment.

(i) What is a suitable representation of this data — a stacked bar chart or a 100% stacked bar chart? Why do you think so?

Time (hh:mm)	Swimming	Cycling	Running
Athlete 1	01:08	05:00	03:15
Athlete 2	01:05	05:10	03:35
Athlete 3	01:22	05:55	03:50

Answer:

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10. The smart watch data of 5 people was tracked from Monday to Friday. The recorded data tells us how many hours each person spent lying down, sitting, and standing or moving around, etc., as shown in the following table.

(ii) Guess what activity or work Julie could be engaged in based on the data. Find out what your classmates' guesses are.

Person	Lying down	Sitting	Standing/moving around, etc.
Pavani (Patient)	20	3	1
Raghu (Nurse)	7	4	13
Zakir (Teacher)	8	6	10
Sahana (Student)			
Julie (_____)	8	10	6

Answer:

Section C: Short and Long Answer Questions

11. Dorjee has collected 1 litre of water from the Dead Sea! Using the information in the table, answer the following questions. A calculator can be used if necessary.

(ii) Is it possible to mix water from the Dead Sea and purified drinking water to get a mixture with the salinity of groundwater? Why/Why not? What quantity of purified drinking water should Dorjee mix with 1 litre of water from the Dead Sea to get a mixture having the salinity of groundwater?

Water source	Salinity
Dead Sea	$\approx 34\%$
Other seas and oceans	$\approx 3.5\%$
Ground water	$\approx 0.01\%$
Purified drinking water	$\approx 0.001\%$

Answer:

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12.(iv) Two male langurs weighing 16.9 kg and 16.1 kg are released from the facility. What is the average weight of the male langurs after this?

(v) Now, suppose one of the male langurs lost 1 kg of weight. What is the average weight of all the male langurs after this?

	Male langurs	Female langurs	All langurs
Average weight	16.5 kg	13.8 kg	14.925 kg
Number of langurs			60

Answer:

13.Shop A has 10 customer ratings with a mean of 4.8. Shop B has 90 ratings with a mean of 3.8. Find the mean of all 100 ratings. Explain why the ordinary average of 4.8 and 3.8 is unsuitable.

Answer:

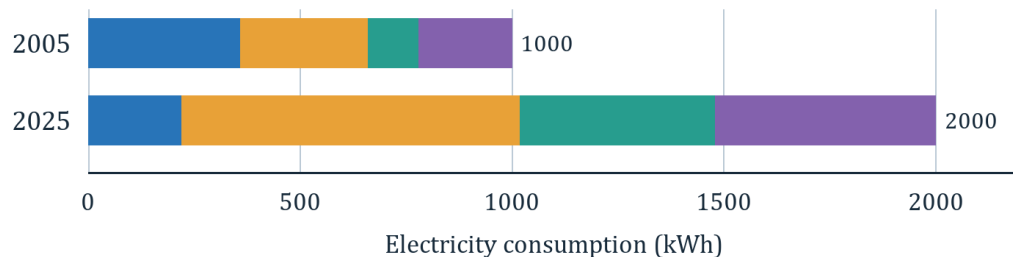
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- Make the corresponding 100% stacked bar chart.

Year	Lighting	Cooling	Kitchen appliances	Other appliances
2005	360	300	120	220
2025	220	800	460	520

■ Lighting ■ Cooling ■ Kitchen appliances
■ Other appliances



Answer:

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(v) Purchase 0.5g gold at ₹30k (vi) Purchase 0.5g gold at ₹15k

A horizontal number line with tick marks at intervals of 5, labeled 0, 5, 10, 15, 20, 25, and 30. The number 0 is also labeled above the tick mark at 15.

Answer: