

Topic: Relative frequency tables

Question: Every student at a certain high school needs to choose exactly one fine arts elective. The following table shows the enrollment of electives for all students. About what percentage of Sophomores were enrolled in art?

	Art	Architecture	Music	Total
Freshman	40	25	55	120
Sophomore	52	12	71	135
Junior	56	45	54	155
Senior	30	60	20	110
Total	178	142	200	520

Answer choices:

- A 29 %
- B 39 %
- C 10 %
- D 26 %



Solution: B

To find the percentage of sophomores who were enrolled in art, we need to find the row for the Sophomores,

	Art	Architecture	Music	Total
Sophomore	52	12	71	135

and turn it into a row-relative frequency.

	Art	Architecture	Music	Total
Sophomore	$52/135=38.5\%$	$12/135=8.9\%$	$71/135=52.6\%$	$135/135=100\%$

We can see from the row-relative frequency that about 39% of the sophomores were enrolled in art.

	Art	Architecture	Music	Total
Sophomore	38.5%	8.9%	52.6%	100%



Topic: Relative frequency tables

Question: Every student at a certain high school needs to choose exactly one fine arts elective. The table shows the enrollment of electives for all students. Which type of relative frequency table would answer the question: “Of the students enrolled in architecture, what percentage of them are seniors?”

	Art	Architecture	Music	Total
Freshman	40	25	55	120
Sophomore	52	12	71	135
Junior	56	45	54	155
Senior	30	60	20	110
Total	178	142	200	520

Answer choices:

- A Column-relative frequency table
- B Row-relative frequency table
- C Total-relative frequency table
- D All of the above



Solution: A

Picking out the column for students enrolled in Architecture,

	Architecture
Freshman	25
Sophomore	12
Junior	45
Senior	60
Total	142

and then turning it into a column-relative frequency

	Architecture
Freshman	$25/142=18\%$
Sophomore	$12/142=8\%$
Junior	$45/142=32\%$
Senior	$60/142=42\%$
Total	$142/142=100\%$

would let us answer the question. We can see that, of the students enrolled in Architecture, 42 % are seniors.



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Question: Emily counted the shape and type of blocks that her little sister owns and organized the information into a table. Which question could she answer by looking at a row-relative frequency that she makes from this table?

		Block Shape		
		Cube	Rectangular Prism	Total
Block Color	Red	5	9	14
	Blue	4	10	14
Total		9	19	28

Answer choices:

- A What percentage of the blocks are red?
- B What percentage of the blocks are red cubes?
- C What percentage of the blocks are blue?
- D What percentage of the blue blocks are rectangular prisms?



Solution: D

To find the percentage of the blue blocks that are rectangular prisms, we want to find the number of rectangular prisms that are blue and the total number of blue blocks. This information is found in the row frequency,

	Cube	Rectangular Prism	Total
Blue	4	10	14

and the percentages would be found in the row-relative frequency.

	Cube	Rectangular Prism	Total
Blue	$4/14=29\%$	$10/14=71\%$	$14/14=100\%$

We can see the percentage of blue blocks that are rectangular prisms in this row-relative frequency table.

