

# Random sampling word problems

name \_\_\_\_\_

class \_\_\_\_\_

Solve the following word problems.

- 1 In the town of Denwar, 8000 adults are there. In a random sample, 78 out of 200 adults said they work at least 7hrs a day. Based on the results, approximately how many adults have work more than 7hrs a day?

$$(78 \div 200) \times 8000 = 3120 \text{ adults approx.}$$

- 2 St. Xavier college conducted student's secretary elections for 3500 students. The principal wants who won the elections in a very short span. He decided to randomly pick 150 paper ballots. There were 3 candidates and the results of his sample are shown below:

	John	Dennis	Barner	Total
Votes	39	80	31	150

- A. Write at least two inferences the principal can make about Dennis ?

He should win. He will get probably half of the votes.

He should win by a large margin.

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- B. Approximately how many total votes will John and Barner receive combined?

Combined they should receive half of the votes, which would equal 1750 votes.

- 3 In a random sample, 48 out of 128 students at Cambridge Elementary School said they prefer sandwich for lunch in the cafeteria. How many sandwiches should the cafeteria prepare if there are 1200 students?

$$(48 \div 128) \times 1200 = 450 \text{ sandwiches approx.}$$

- 4 The MASTER bakery would like to know the customer's interests. They normally serve 1500 customers each day, but decided to randomly ask 300 customers what they prefer. The data from the five days of sampling is below.

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Day	Pie	Cake	Cookie	Donuts	Pudding	Ice cream	Total
Mon	8	16	14	8	4	10	60
Tue	7	20	10	4	7	12	60
Wed	5	18	13	7	6	11	60
Thu	5	18	8	12	8	9	60
Fri	6	10	8	13	8	15	60
Total	31	82	53	44	33	57	300

- A. Based on the results, approximately how many cakes should they prepare every day?

$$(82 \div 300) \times 1500 = 410 \text{ cakes approx.}$$

- B. About what percent of the people want cookies?

$$(53 \div 300) \times 1500 = 265$$

$$(265 \div 1500) \times 100 = 17.67\% \text{ customers}$$

- C. What is the second most popular in the bakery? Ice creams