Name:_____   Class: _____   Date:_____

Population Density

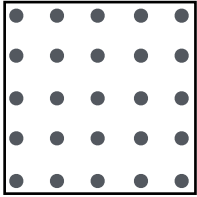**Directions**: The graphic below shows information about population density in a few U.S. cities. Use the information in the infographic to complete the table. Then answer the questions below.
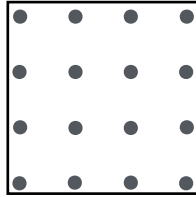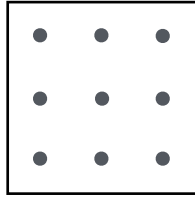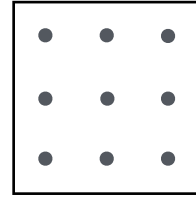
US CITIES
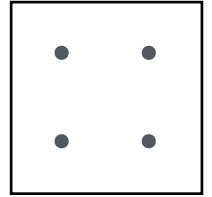People per Square Mile

NYC 27,000	San Francisco 18,000	Chicago 12,000	Los Angeles 8,000	Houston 4,000

Location	Density (ppl/sq. mile)	Row/Column	Total Dots	Ratio (dots:density)
NYC				
San Francisco				
Chicago				
Los Angeles				
Houston				

1) Why do you think these cities were chosen for this infographic? _____

_____

_____

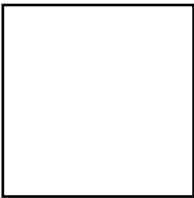2) Can you determine the population of these cities? If not, what information is needed to do so?

_____

_____

3) How might this information be useful for city planners or other government officials?
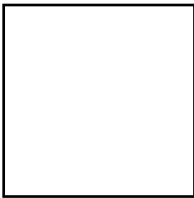
_____

_____

_____

Using the same format (and ratio), create a graphic to illustrate the population density for each borough in New York City.

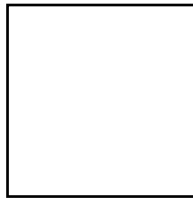| Location	Density (ppl/sq. mile)	Ratio (dots:density)	Total Dots	Row/Column
Manhattan	72,000			
Brooklyn	37,000			
The Bronx	34,000			
Queens	21,000			
Staten Island	8,000			

Manhattan
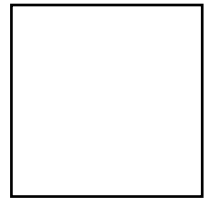72,000

Brooklyn
37,000

The Bronx
34,000

Queens
21,000

Staten Island
8,000

4) New York recently spent billions on a new subway line on the east side of Manhattan. Based on the information above, why do you think politicians approved this project instead of trying to improve transportation to and from Staten Island?
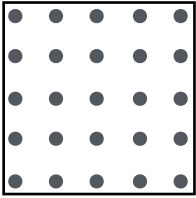
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Directions: The graphic below shows information about population density in a few U.S. cities. Use the information in the infographic to complete the table. Then answer the questions below.
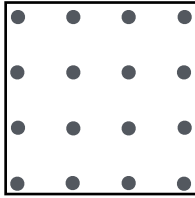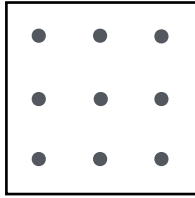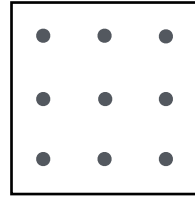
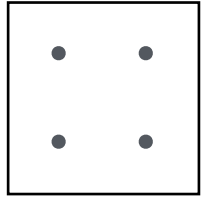## US CITIES
People per Square Mile

NYC	San Francisco	Chicago	Los Angeles	Houston
27,000	18,000	12,000	8,000	4,000

Location	Density (ppl/sq. mile)	Row/Column	Total Dots	Ratio (dots:density)
NYC	27000	5	25	1:1080
San Francisco	18000	4	16	1:1125
Chicago	12000	3	9	1:1333.3
Los Angeles	8000	3	9	1:888.9
Houston	4000	2	4	1:1000

1) Why do you think these cities were chosen for this infographic? **These are four of the five most populous cities in the United States. San Francisco is 13th, but it is the second-most densely populated large city after New York City.**
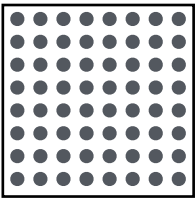
2) Can you determine the population of these cities? If not what information is needed to do so?
You cannot determine the population. You would need to know how many square miles each city is. Most importantly, since these infographics ask us to visualize in even numbers of rows and columns, the number of dots only approximate density numbers and could not safely be extrapolated.

3) How might this information be useful for city planners or other government officials?
States may use this information to determine where to allocate funding for housing, transportation, and other infrastructure developments or maintenance, such as garbage removal, school construction, water distribution, and much more.
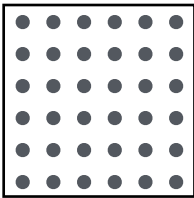
Using the same format (and ratio) create a graphic to illustrate the population density for each borough in New York City.

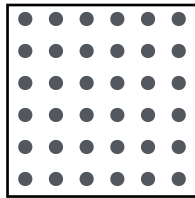| Location	Density (ppl/sq. mile)	Ratio (dots:density)	Total Dots	Row/Column
Manhattan	72,000	1:1000	64	8
Brooklyn	37,000	1:1000	36	6
The Bronx	34,000	1:1000	36	6
Queens	21,000	1:1000	25	5
Staten Island	8,000	1:1000	9	3

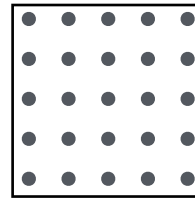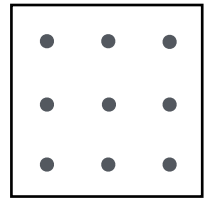**Manhattan**
72,000

Brooklyn
37,000

The Bronx
34,000

Queens
21,000

Staten Island
8,000

4) New York recently spent billions on a new subway line on the East side of Manhattan. Based on the information above , why do you think politicians approved this project instead of trying to improve transportation to and from its farthest borough Staten Island?

Manhattan is nine times more densely populated than Staten Island (in fact, Yorkville on the Upper East Side – where the new subway line is – is the most densely populated neighborhood in the city at 168,000 people/square mile). Improving transportation in Manhattan will affect many more people than it will in Staten Island.

Location	Population	Density	Row	Total Dots	Ratio
NYC	8,175,133	27000	5	25	1080.0
San Francisco	805,235	18000	4	16	1125.0
Chicago	2,695,598	12000	3	9	1333.3
Los Angeles	3,792,621	8000	3	9	888.9
Houston	2,099,451	4000	2	4	1000
Buffalo	261,310	6390	?		
Albany	97,856	4572.3	2	4	1143.075
Manhattan		72000	8	64	1125.0
Brooklyn		37000	6	36	1027.8
Bronx		34000	6	36	944.4
Queens		21000	5	25	840.0
SI		8000	3	9	888.9