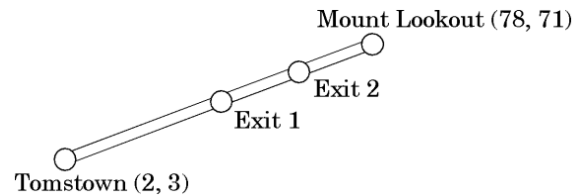


1.5.D2 – THE COORDINATE PLANE**ALL WORK MUST BE SHOWN TO RECEIVE CREDIT.**

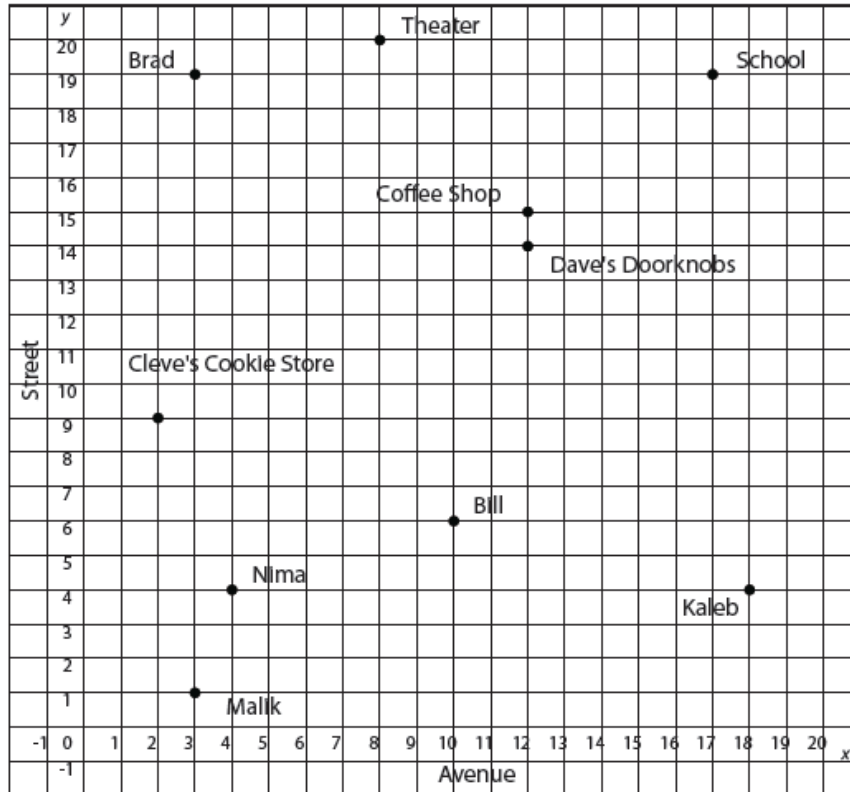
- On a number line, M is at -5 and N is at 4 . What is the location of A between M and N such that the length of AN is 3 times the length of \overline{MA} ?
- A string with a length of 32 inches has been tied into 9 knots so that 8 equal sections are created. The first knot, from the left, is labeled R , the second knot S , and so on; the last knot is Z . Identify the knot that partitions the string into a ratio of 3:5. Explain your reasoning. What are the lengths of the two partitions?

- Using the map shown, the highway department locates two exits between Tomstown and Mount Lookout. From Tomstown, Exit 1 is halfway to Mount Lookout, and Exit 2 is three-fourths of the way to Mount Lookout. What are the coordinates for Exit 2?



- Given points $B(-1, 2)$ & $F(7, 14)$.
 - Find the coordinates of the point P on directed line segment \overline{BF} that partitions \overline{BF} in the ratio 1:3.
 - What is the length of \overline{PM} if M is the midpoint of \overline{BF} ?
- Given the points $J(-3, -4)$ & $S(5, 0)$, find the coordinates of the point P on directed line segment \overline{JS} that partitions \overline{JS} in the ratio 2:3.
- Points $X(6, 4)$ & $Y(-4, -16)$ are the endpoints of \overline{XY} . What are the coordinates of point Z on \overline{XY} such that XZ is $\frac{3}{5}$ the length of \overline{XY} ?

Use the map and the information given to solve each problem that follows.



- Nima lives at the corner of 4th Avenue and 4th Street and has agreed to go to the movies with Brad. She will meet him first for burgers at a diner located $\frac{3}{4}$ of the way from her house to the movie theater at 8th Avenue and 20th Street. What is the location of the diner?
- Cleve's Cookie Store is located at the corner of 2nd Avenue and 9th Street. Dave's Doorknobs is located at the corner of 12th Avenue and 14th Street. Located $\frac{1}{5}$ of the distance from Cleve's Cookie Store is the post office. What is the location of the post office?
- Malik lives at the corner of 3rd Avenue and 1st Street and Kaleb lives at the corner of 18th Avenue and 4th Street. A market is located at 2:3 distance ratio from Kaleb's apartment to Malik's apartment. What is the location of the market?
- The main entrance to the high school is located at the corner of 17th Avenue and 19th Street. On his way from school to the bank, Luis stops at the coffee shop located at 12th Avenue and 15th Street. The coffee shop is the midpoint of this trip. What is the location of the bank?