

2-4 Estimating Measures: Length and Area

Warm-up - Review

Simplify. Write answer in scientific notation

1. $\frac{7.2 \times 10^4}{36}$
 - a. $\frac{7.2 \times 10^4}{3.6 \times 10^1} = 2 \times 10^{4-1} = 2 \times 10^3$
2. $60 \bullet (3.5 \times 10^{-4})$
 - a. $210 \times 10^{-4} = 2.1 \times 10^{-6}$

Evaluate when $x = -5$ and $y = -7$

3. $|x|$
 - a. $|-5| = 5$
4. $-x-y$
 - a. $-(-5)-(-7) = 5 + 7 = 12$
5. $-3x + 2y$
 - a. $-3(-5) + 2(-7) = 15 - 14 = 1$

Estimating distance and area on a map

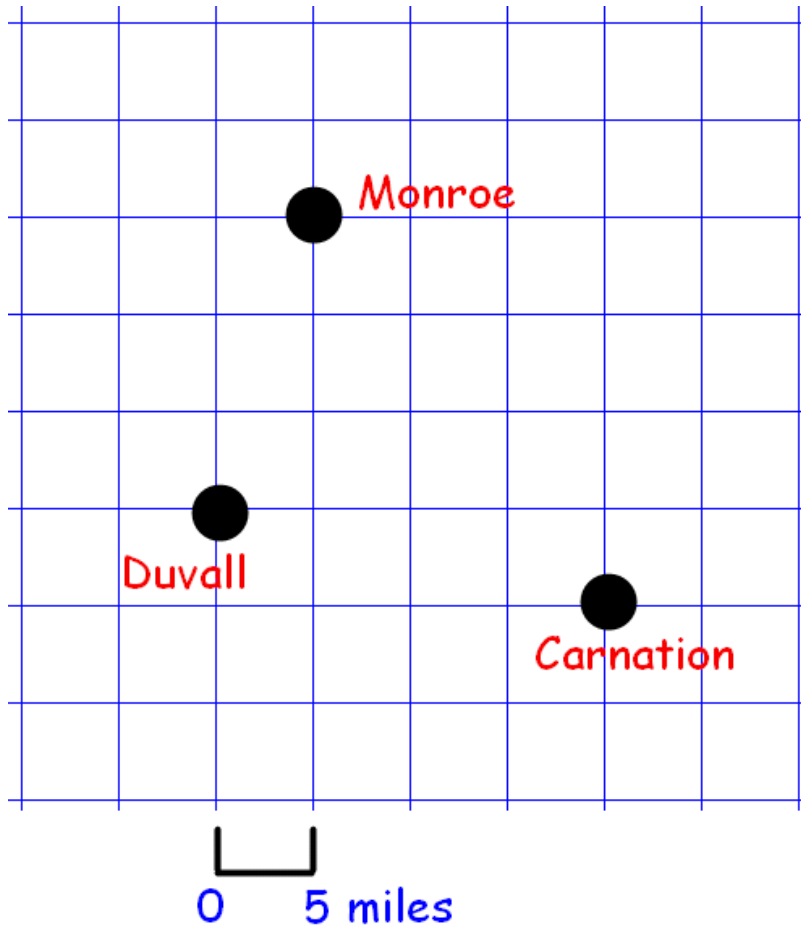
The scale on a map helps you estimate the distance between any two locations on the map. The scale also helps estimate the area of any region on a map.

Two systems of measure

1. US customary units of length
 - a. Example – inches, feet, yards, and miles.
2. Metric units of length
 - a. Example – millimeters, centimeters, meters, kilometers
 - b. Based on ten.

Our rulers show both!

Review pictures on pg. 79 – Guide to US Customary Units of Length and Guide to Metric Units of Length. Know the relationship between the two systems.

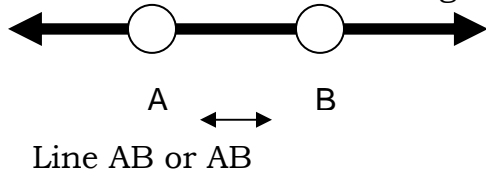


Estimate each distance using the map:

1. Monroe to Duvall: About 17 miles
2. Duvall to Carnation: About 15 miles
3. Carnation to Monroe: About 20 to 25 miles
4. Estimate the total area of the graph shown.
 - a. Each square is ~ 5 miles \times 5 miles = 25 mi²
 - b. Count the squares - ~ 28
 - c. So, $28(25) = 700$ mi²

Key Terms

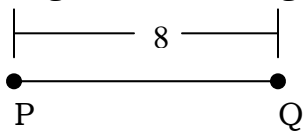
Line – A geometric figure determined by two points that extends forever in two directions. The line through points A and B is denoted \overleftrightarrow{AB} .



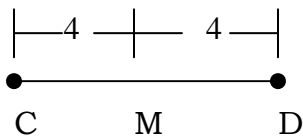
Segment – A part of a line that consists of two points on the line and all the points on the line between these two endpoints. The segment from point X to point Y is denoted \overline{XY} .

Endpoint – One of two points on a line that determines a segment. The endpoints of \overline{XY} above are X and Y.

Length of a segment – The distance between the endpoints of a segment. The length of \overline{PQ} is denoted PQ which is 8.

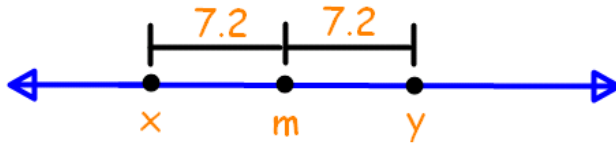


Midpoint – The point on a segment that divides the segment in half.



M is the midpoint of \overline{CD}

Example



1. Name a $\overrightarrow{\quad}$
 - a. \overleftrightarrow{xy}
2. Name 2 segments
 - a. xy , xm , my
3. Find xy
 - a. $7.2 + 7.2 = 14.4$
4. What is point m?
 - a. M is the midpoint of \overline{xy}

Homework

Read pg. 79 – 82

Pg. 78 #1-10; Pg. 82 #2-4, 6-20