

Math 4a. Classwork 11.

**Warm up.**

Simplify:

$$-(+10); \quad +(-20); \quad +(+30); \quad -(-40); \quad -(+7); \quad -(-15); \quad -(-(-20));$$

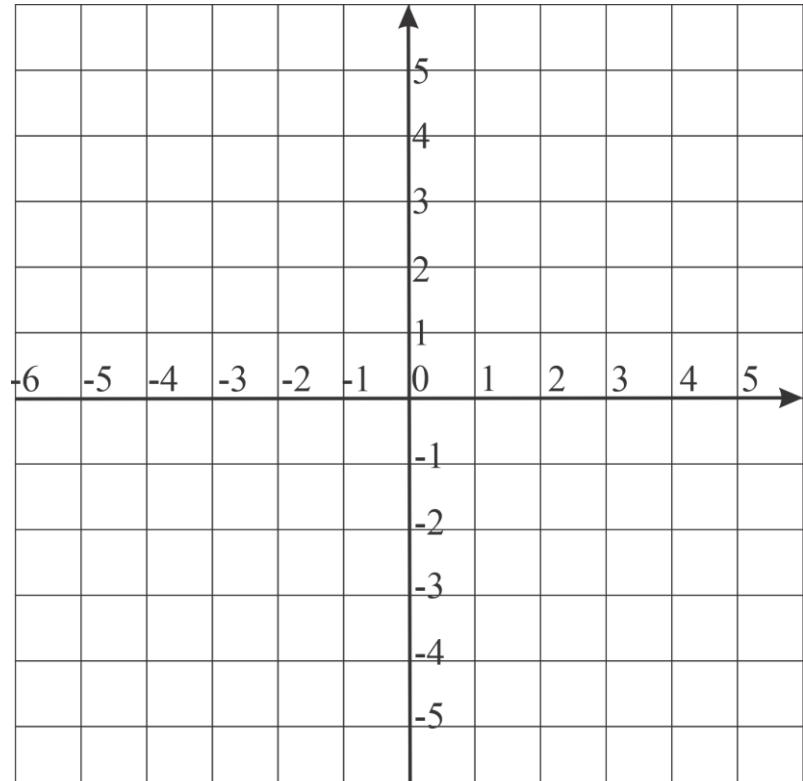
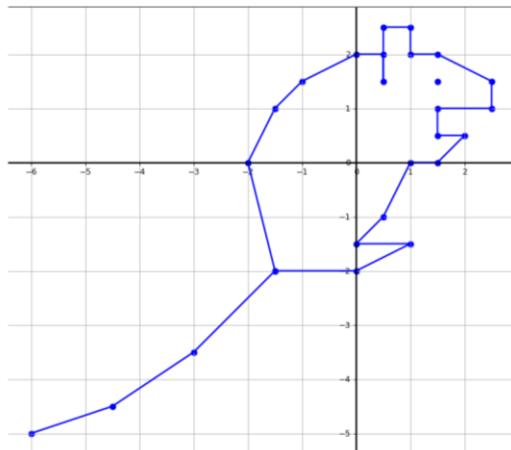
Evaluate:

$$-5 + 25; \quad 8 - 16; \quad 6 + (-14); \quad 1 - (-11);$$

$$-7 - 11; \quad -18 + 9; \quad -2 - (-6); \quad 15 + (-8);$$

$$-6 + 6; \quad -10 - 10; \quad -5 + (-7); \quad -20 - (-2);$$

**Coordinates.**



$$(-6, -5), \left(-4\frac{1}{2}, -4\frac{1}{2}\right), \left(-3, -3\frac{1}{2}\right), \left(-1\frac{1}{2}, -2\right), (-2, 0), \left(-1\frac{1}{2}, 1\right), \left(-1, 1\frac{1}{2}\right), (0, 2), \left(\frac{1}{2}, 2\right),$$

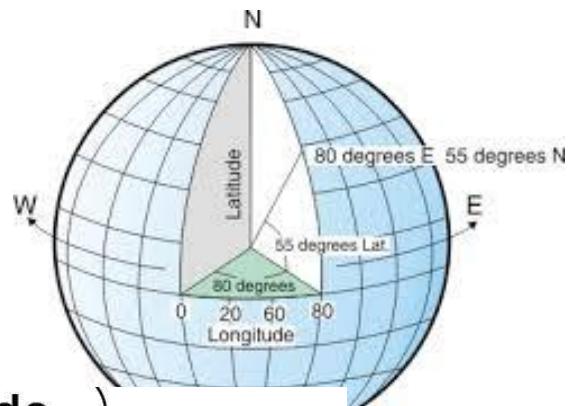
$$\left(\frac{1}{2}, 1\frac{1}{2}\right), \left(\frac{1}{2}, 2\frac{1}{2}\right), \left(1, 2\frac{1}{2}\right), (1, 2), \left(1\frac{1}{2}, 2\right), \left(2\frac{1}{2}, 1\frac{1}{2}\right), \left(2\frac{1}{2}, 1\right), \left(1\frac{1}{2}, 1\right), \left(1\frac{1}{2}, \frac{1}{2}\right), \left(2, \frac{1}{2}\right), \left(1\frac{1}{2}, 0\right),$$

$$(1, 0), \left(\frac{1}{2}, -1\right), \left(0, -1\frac{1}{2}\right), \left(1, -1\frac{1}{2}\right), (0, -2), \left(-1\frac{1}{2}, -2\right), \left(-1\frac{1}{2}, -2\right), (1\frac{1}{2}, 1\frac{1}{2})$$

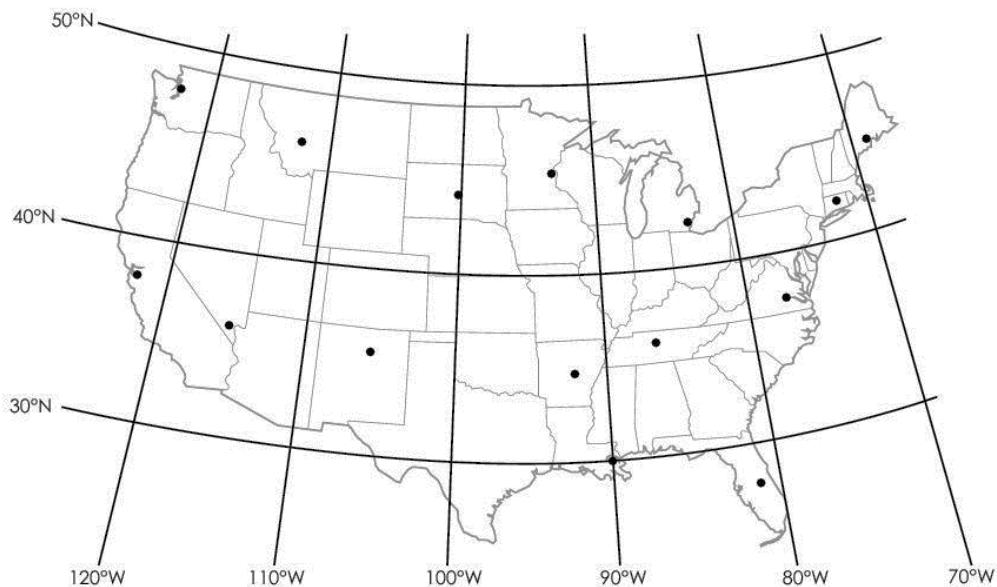
## Earth coordinate system:

A *geographic coordinate system* uses a three-dimensional spherical surface to determine locations on the earth.

Any location on earth can be referenced by a point with longitude and latitude coordinates.



## Latitude and Longitude



Using the coordinates listed below, write the name of the city next to its plotted latitude and longitude point on the map.

Detroit, Michigan: 42°N, 83°W

Richmond, Virginia: 37°N, 77°W

New Orleans, Louisiana: 30°N, 90°W

Pierre, South Dakota: 44°N, 100°W

Orlando, Florida: 28°N, 81°W

Santa Fe, New Mexico: 35°N, 106°W

Hartford, Connecticut: 42°N, 72°W

Helena, Montana: 46°N, 112°W

Las Vegas, Nevada: 36°N, 115°W

Little Rock, Arkansas: 35°N, 92°W

Seattle, Washington: 47°N, 122°W

San Francisco, California: 38°N, 122°W

Augusta, Maine: 44°N, 69°W

Nashville, Tennessee: 36°N, 87°W

Minneapolis, Minnesota: 45°N, 93°W

## Latitude and Longitude



1. 33°N latitude, 112°W longitude \_\_\_\_\_

4. 29°N latitude, 95°W longitude \_\_\_\_\_

2. 35°N latitude, 78°W longitude \_\_\_\_\_

5. 43°N latitude, 79°W longitude \_\_\_\_\_

3. 45°N latitude, 122°W longitude \_\_\_\_\_

6. 25°N latitude, 80°W longitude \_\_\_\_\_

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