

Math Lab Instructor Notes

“Integers in the Real World”

Prealgebra - Integers

- Name/School: Alan Bass / San Diego Mesa College
- Course Level/Topic: Prealgebra
- Materials: None
- Time Required: about 20 to 30 minutes
- Brief Description: students read a short application-based passage then answer questions by creating numeric expressions
- General Notes:
- Follow Up/ Discussion Questions:

In this lab you will be using integers to express real-world data.

Example: Extreme Temperatures

The hottest temperature ever recorded on Earth was a balmy 136 degrees above freezing recorded in a city in Libya. The coldest temperature ever recorded on Earth was a chilly 129 degrees below freezing recorded at an Arctic weather station.

Integers in the Real World

Name(s): _____

129 1) What integer represents the hottest temperature ever recorded?

-136 2) What integer represents the coldest temperature ever recorded?

129 - (-136) 3) What numeric expression represents the difference between the hottest and coldest temperatures ever recorded?

265 4) What is the difference between the hottest temperature ever recorded on Earth and the lowest temperature ever recorded on Earth?

1.) Elevation

The highest elevation on Earth is at Mount Everest. It is 29,035 feet (8850 meters) above sea level. The lowest elevation on Earth is the Bentley Subglacial Trench. It is 8327 feet (2555 meters) below sea level.

_____ 1) What integer represents the highest elevation on Earth?

_____ 2) What integer represents the lowest elevation on Earth?

_____ 3) What numeric expression represents the difference between the highest and lowest elevation?

_____ 4) What is the difference between the highest elevation on Earth and the lowest elevation on Earth?

2.) The Stock Market

The Dow-Jones Industrial Average (or “The Dow”) is a number that tracks the overall progress of the stock market. If stocks are generally doing good, then the Dow goes up. If stocks generally doing bad, the Dow goes down. In a typical week, news about the stock market will be reported something like this...

Monday: “The Dow is up 125 points.”

Tuesday: “The Dow is down 73 points.”

Wednesday: “The Dow is down 46 points.”

Thursday: “The Dow is up 158 points.”

Friday: “The Dow is down 87 points.”

1) Choose an integer to represent the stock market’s progress for every day of the week:

Monday: _____

Tuesday: _____

Wednesday: _____

Thursday: _____

Friday: _____

_____ 2) What numeric expression represents the overall change in The Dow for the whole week?

_____ 3) What was the overall result for the week?

3.) Temperature

The following table gives some information about the planets in our solar system.

Planet	Diameter (km)	Time for 1 orbit	Normal temperature on sunny side (°C)	Moons
Earth	12,800	365 days	20	1
Jupiter	140,000	12 years	-150	16
Mars	7,000	2 years	-20	2
Mercury	5,000	88 days	430	0
Neptune	50,000	160 years	-220	8
Saturn	120,000	30 years	-180	18 + rings
Uranus	52,000	84 years	-210	15 + rings
Venus	12,000	220 days	470	0

You may be familiar with how to calculate an average.

To calculate the average of a list of numbers:

1. add all the values in the list
2. divide by the numbers of numbers in the list
3. the result is the average of the list of numbers

_____ 1) What numeric
expression represents the *average* of all the normal temperatures of the planets?

_____ 2) What is the average normal temperature of all the planets?