**Treasure Hunt #1 – Answers**

**PHASE 1 – Initial Problems:**

Fill in the following sequences of blanks using the answers from the below problems. The entries are all integers between 1 and 26 (inclusive on both sides):

1: \_\_8\_\_-\_\_11\_\_-\_\_12\_\_-\_\_20\_\_-\_\_9\_\_-\_\_2\_\_-\_\_1\_\_-\_\_4\_\_-\_\_2\_\_

2: \_\_6\_\_-\_\_16\_\_

3: \_\_13\_\_-\_\_12\_\_-\_\_20\_\_-\_\_2\_\_-\_\_15\_\_

**Group 1, Math:**

1. You walk into a pie shop to buy one of their world-famous pies. You heard from a friend that they only cost $7.99. When you arrive, you hear that due to skyrocketing cherry prices, the prices of the pie have soared up 31.81%! After a 6.825% sales tax, the pie is really getting expensive. Good thing you brought your Pi Day coupon ($3.14 off)! What’s the final pie price? Fill in the 1st and 2nd blanks of sequence 1, rounded to 2 decimal points (\_\_\_.\_\_\_)

8.11

1. , what is x? Fill in the 3rd blank of sequence 1.

x = 12

1. 40% of 52.25 = ? Fill in the 4th and 5th blanks of sequence 1 (\_\_\_.\_\_\_)

20.9

1. 7.5(x+3) = 38.25, what is x? Fill in the 6th and 7th blanks of sequence 1 (\_\_\_.\_\_\_)

x = 2.1

1. -8.25(x-17.48) = 109.56, what is x? Fill in the 8th and 9th blanks of sequence 1 (\_\_\_.\_\_\_)

x = 4.2

**Group 2, More Math:**

1. Find the intersection of these two lines, and fill that point in on sequence 2:

(6, 16)

**Group 3, History/Geography:**

These problems are multiple choice. Fill in the corresponding number of your selected answer in sequence 3.

1. What country has the 2nd largest population in the world according to the 2021 United Nations Population Division estimate?

China – **24**

India – **13**

United States – **3**

Russia – **14**

1. What King of England was also the disputed King of France between 1422 and 1453?

Henry V – **16**

Henry IV – **25**

Edward IV – **7**

Henry VI – **12**

1. What country is 1/10th of the size of New York City and is landlocked on all sides by the 2020 Euro winners?

Andorra – **9**

San Marino – **20**

Czech Republic – **6**

Liechtenstein – **4**

1. What date did the first atomic bomb test take place, and what was the test site called?

July 16th, 1945 and Trinity – **2**

July 14th, 1945 and Trinity – **24**

June 24th, 1944 and Gadget – **8**

July 16th, 1945 and Gadget – **19**

1. How many human casualties were there in the infamous Pig War of 1859?

0 – **15**

2 – **23**

359 – **1**

16 – **5**

**PHASE 2 – Ciphers:**

Copy in your same results from Phase 1 below:

1: \_\_8\_\_-\_\_11\_\_-\_\_12\_\_-\_\_20\_\_-\_\_9\_\_-\_\_2\_\_-\_\_1\_\_-\_\_4\_\_-\_\_2\_\_

2: \_\_6\_\_-\_\_16\_\_

3: \_\_13\_\_-\_\_12\_\_-\_\_20\_\_-\_\_2\_\_-\_\_15\_\_

Use a A1Z26 cipher to convert each sequence of numbers to a sequence of letters:

1: HKLTIBADB

2: FP

3: MLTBO

Use a Caesar cipher (right 3 shift) to convert the above sequence of letters into recognizable words:

1: KNOWLEDGE

2: IS

3: POWER

**PHASE 3 – Coordinate Hunt:**

Finally, you’ll be learning how to use a Linux tool called grep to hunt for the words you decoded in Phase 2. Using the grep example page and manual below, learn how to grep for specific file contents. You’re looking for 3 separate files, each one containing one of the decoded words from Phase 2. There are thousands of dummy files with other words and false coordinates, so don’t even bother trying to brute-force it. All 3 files are located somewhere in the home (~) directory of the Raspberry Pi.

grep examples: <https://www.thegeekstuff.com/2009/03/15-practical-unix-grep-command-examples/>

Manual page: <https://man7.org/linux/man-pages/man1/grep.1.html>

Each of these 3 files contains pieces of the coordinates of the buried treasure. Fill in the below section to determine the coordinates.

1: \_\_knowledge\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_35\_\_\_° \_\_\_106\_\_°

2: \_\_is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_08\_\_\_\_’ \_\_\_28\_\_\_’

3: \_\_power\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_49.4\_\_\_”\_N\_ \_\_52.6\_\_\_”\_W\_

1 2

File 1: ~/Documents/test3/file\_68.txt grep -wr knowledge \*

File 2: ~/Videos/test0/file\_28.txt grep -wr is \*

File 3: ~/Pictures/test2/file\_89.txt grep -r power \*

Final Coordinates:

\_\_\_\_35\_\_°\_\_\_08\_\_\_’\_\_49.4\_\_”\_\_\_N\_\_\_ \_\_\_106\_\_\_°\_\_\_28\_\_\_’\_\_\_52.6\_\_\_”\_\_\_W\_\_\_

To find the buried treasure, you must first hike to the above coordinates. Look for the only tall juniper tree in the area. The treasure is buried in a small plastic bottle on the south side of this tree.