

Name: _____ Math homework for week 1.6

Students have choice this week in their homework; choose ONE out of the three:

1. Choose one challenge math problems and complete 8 problems on worksheet
2. Choose two challenge math and complete 5 problems on worksheet
3. Choose three challenge math and complete 2 problems on worksheet

Worksheet problems:

The Alaska Range: The Highest peak in this mountain range is Mount McKinley, reading 20,320 feet. Southwest of this mountain is Mount Foraker, which is 12,400 feet.

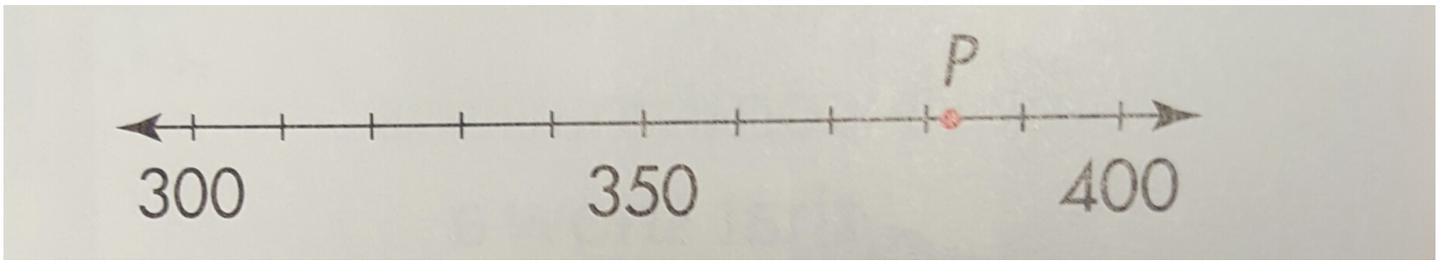
Crater Lake: The elevation of this lake is 6,178 feet. It is the deepest lake in the United States with the lowest point at 1,949 feet above sea level.

Death Valley: Death Valley is the lowest point in the United States at 282 feet below sea level.

1. Use the above chart to answer: The deepest point of the Pacific Ocean is 36,198 feet below sea level, located in a region called the Marianas Trench. Estimate the difference between the deepest point of the Pacific Ocean and Death Valley.
2. Use the above chart to answer: Mount McKinley is the highest point in the United States. Death Valley is the lowest point in the United States. Give the exact difference and the estimated difference between the highest point and the lowest point in the United States.
3. Simon asked Margaret to guess a number. He gave these hints:
 - The number has 3 digits
 - The digit in the 100s place is less than 2
 - The digit in the 10s place is greater than 8
 - The number is even

What are the possible numbers?

4. What number is best represented by point P on the number line?



5. Arthur is tiling a bathroom wall. He has 520 wall tiles. He wants to arrange them in patterns of hundreds and tens. Using only the hundreds and ten blocks, how many ways can he make 520?

6. There were 10,452 items checked out of the public library one week. The next week, 12,975 items were checked out. A week later, 9,634 items were checked out. How many items were checked out in three weeks?

7. The United States purchased Louisiana from France in 1803. The Louisiana Territory belonged to Spain before France. The price for the land was about 3 cents per acre. The total cost was \$15,000,000. Approximately 828,000 square miles of land was purchased.

The Louisiana Purchase almost doubled the size of the United States.

Approximately how large was the United States after the purchase?

8. Solve the equations:

- $7 + \underline{\quad} = 31$

- $565 - \underline{\quad} = 381$

- $12,743 = \underline{\quad} - 3,871$

Challenge Questions:

ARITHMETIC RING

Problem

The digits 1, 2, 3, 4, 5, 6, 7 and 8 are placed in the ring below.

1	5	3
8		7
4	6	2

With the exception of 6 and 7, no two adjacent numbers are consecutive.

Show how it is possible to arrange the digits 1 to 8 in the ring so that no two adjacent numbers are consecutive.

ANCIENT RIDDLE

Problem

The end of topic tests in mathematics are looming and you realise that you have spent one too many lunch times surfing the internet and not revising. Just before you log off you suddenly remember that you never actually logged into the terminal. Curious about who left the computer logged in, you discover that it was your mathematics teacher.

You decide to "research" the contents of his private directory and stumble upon a file called, "end_of_topic_test.doc". After checking that no one is looking, you double click on the filename and are greeted with a box requesting a password.

Not to be out-done, you look through the files and discover a file called, "password.gif". You cannot believe your luck! Excitedly you double click it and are presented with the following image:

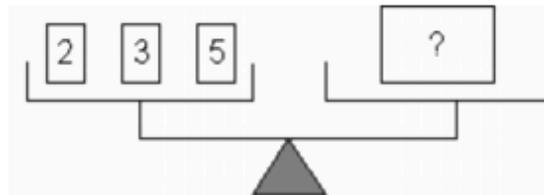
ΑΡΧΙΜΗΔΗΣ

Can you discover the password?

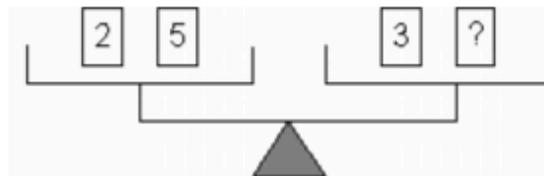
BALANCING SCALES

Problem

In order for the scales to balance the block on the right side must be 10 kg.



It is possible to use the same weights to weigh, for example, 4 kg.



In fact using 2 kg, 3 kg and 5 kg weights it is possible to weigh all but one value from 1 kg to 10 kg. What is that value?

(Note: You don't have to use all three weights.)

BIRDS AND BUNNIES

Problem

A cage contains birds and rabbits. There are sixteen heads and thirty-eight feet. How many birds are there in the cage?