

CodeWorlds 7 - Task Packet

Task 1: Passwords

You will interpret data from 25 randomly generated passwords.

1. Go to <http://www.random.org/passwords/> .
2. Don't change anything in the boxes. Click "Get Passwords".
3. The program will generate 5 passwords.
4. Count the number of passwords that have a 'z' OR a '4' in them (Uppercase or lowercase, doesn't matter).

Example:

In this group of 5 generated passwords, there is only 1 password with a 'z' or a '4' in it (the last one--pu7yZtAM), so I would write "1" in the table, like this:

```

U9PE6rtt
DdcU32Jh
gKcAn9Yp
b59fApa6
pu7yZtAM
    
```

	# of passwords with a 'z' OR a '4'
1st group of passwords	1

5. Do this 5 times (You will generate 25 total passwords).
6. Fill in the chart below.

	# of passwords with a 'z' OR a '4'
1st group of passwords	
2nd group of passwords	
3rd group of passwords	
4th group of passwords	
5th group of passwords	
all the passwords combined	

7. Respond to the following questions:

<p>a. If you generated 100 passwords using the same method, how many do you think would have either a 'z' or a '4' in them? Why?</p>	<p>b. If you generated 100 passwords using the same method, how many do you think would have a 'z' in them? Why?</p>
<p>c. If you generate just 1 password (instead of 5), what do you think your chances are of having a '4' or a 'z' in the password? Why? Try it out...</p>	<p>d. Do you use a password generator to generate your online passwords? Why or why not?</p>

Task 2: Count!

1. Pick something to count. It could be anything: the number of times you pop bubble gum a day; the number of times your brother annoys you per day; the number of dogs you see before noon each day; the number of times it takes you to complete each new level in your favorite game; the number of brushes you do each time you brush your teeth. Whatever. **If you can't think of anything that you like, then count the number of steps you take each time on your way from the front door to a bedroom.**
2. Count. Count the thing that you are counting at least 10 times (over a week or a month or so). Keep track of your count in the box below. **Here's an example:**

Description (What are you counting/measuring?): <i>I am measuring the time that I have to wait for my subway train (2/3 from Grand Army Plaza to 14th Street).</i>
Data (at least 10): 1:23 2:10 5:03 :34 4:10 10:32 1:45 1:32 1:20 3:42 4:21 2:58
total counts: 12 minimum: :34 maximum: 10:32 mean: 2:58

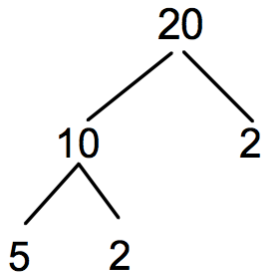
Here's your chart:

Description (What are you counting/measuring?):
Data (at least 10):
total counts: minimum: maximum: mean:

If you counted a thousand times, do you think you could predict an average # for your situation? If you can predict it, what would it be? If you don't think you can predict it, why not? Are there some factors that might make prediction difficult?

Task 3: Trees

Here is a factor tree for the number 20. Can you make a different tree for 20?



20

Make **3** different factor trees for 24.

Make **3** different factor trees for 36.

Make **3** different factor trees for 80.

Task 4: Equal

Below, you are given several fractions. For each fraction, write 4 equivalent fractions in the blanks provided. Also, give a decimal and a percentage conversion in the last column.

$1/2$, $30/60$, _____, _____, _____, _____ Decimal: Percentage:

$1/4$, $3/12$, _____, _____, _____, _____ Decimal: Percentage:

$1/8$, $4/32$, _____, _____, _____, _____ Decimal: Percentage:

$1/5$, $20/100$, _____, _____, _____, _____ Decimal: Percentage:













Extension (optional):

$2/3$, _____, _____, _____, _____ Decimal: Percentage:

$4/7$, _____, _____, _____, _____ Decimal: Percentage:

Task 5: Times Table Review

Complete this times table. What do you notice about the numbers that go in the pentagons?

x	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Extension (optional):

The Rubbel telescope has just shown scientists 2 pictures from the Rakneez solar system. It seems that they have found life. Specifically, they have found intelligent life, and the alien's hands look like they have 3 fingers each (six total). Also, they found an image of a times table from an alien elementary school. See if you can complete it. It looks like this:

	1	2	3	4	5	10
1						
2	2	4	10	12	14	20
3						
4						
5						
10						