Logic 3: Due February 15, 2019

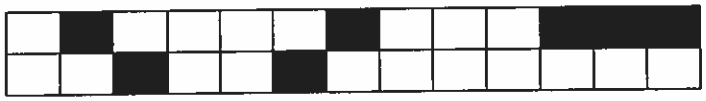
Name _____ **Period** ____

Problem 1 **Time =** _____

To solve these Phrase Boxes, drop the letters from each vertical column into the empty squares below them to spell a sentence. Black squares indicate the ends of words.

Example:

T	O	W	B	E	T	H	A	O	U	I	E	R
I			A	N			Y	P	P			



ANSWER: I WANT YOU TO BE HAPPIER.

Phrase Box 1

S	H	E	A	D	E	O	I	L
T	P	E		K		V	F	

Phrase Box 2

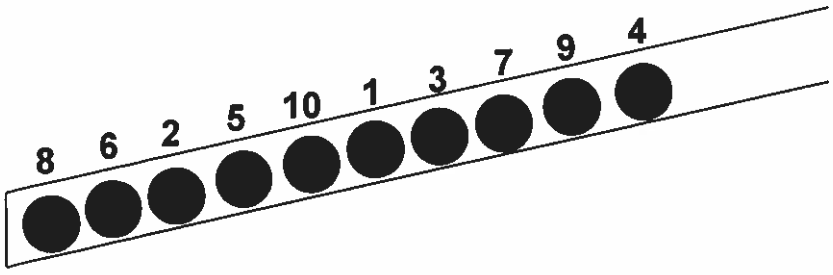
I	E	G	C	O	N	T		A	N
A	T	M		A	S	D		A	
L	R								

Problem 2 **Time = _____**

Here is a problem one of my college professors gave me back in my college years.

Ten cartons are arranged on a tilted roller track, as shown below. The mechanical arm used to sort them into numerical order from left to right can move up to three adjacent cartons at a time to the right-hand top of the track. The cartons roll down to fill the gap. Sort the cartons in five moves.

Examples (further explanation)
If you used the mechanical arm to lift up cartons 6 and 2 and moved them to the right-hand top of the track, the new order of the cartons would become 8-5-10-1-3-7-9-4-6-2.
If instead you used the mechanical arm to lift up cartons 3-7-9 and moved them to the right-hand top of the track, the new order would become 8-6-2-5-10-1-4-3-7-9.



1st move is _____

2nd move is _____

3rd move is _____

4th move is _____

5th move is _____

Problem 3 **Time = _____**

What digits do the letters represent in the below addition problem?

```
  O D D
  O D D      O = ___  D = ___  L = ___  E = ___
+ O L D
-------
  L E O
```

Problem 4 **Time = _____**

Cross out 11 letters from the set of letters below to spell out a 4 word sentence.

RYBATCUKTTOSAQOUAWRSEOTNYE

Problem 5 **Time = _____**

Problem 5 **Time = _____**

From 1:00 p.m. to 5:00 p.m how often are the digits of a digital clock in ascending order?

Example: At 1:25 the digits are in ascending order since 2 comes after 1 and 5 comes after 2.

Note: 1:14 or 3:38 don't count as being in ascending order.

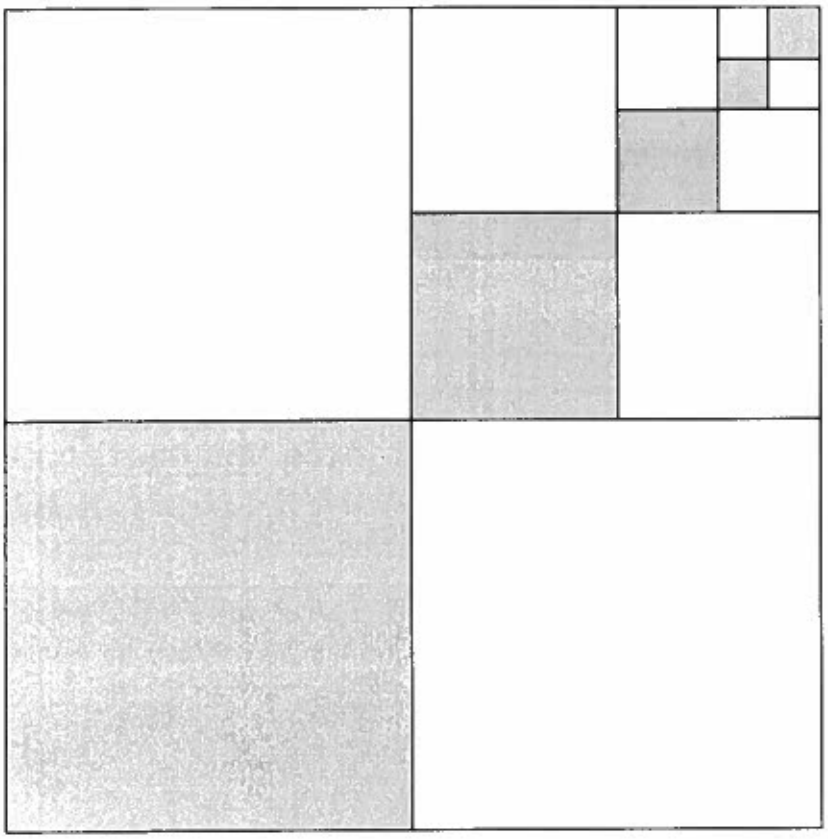
Answer is _____

Problem 6 **Time = _____**

I just moved into a new neighborhood and have been given four brass house numbers: 2, 3, 7, and 9. Since I am the first house in the neighborhood, I get to choose what my address is going to be using these 4 brass numbers. The only catch is that my address can't be four digits long (a single digit address, two digit address, or three digit address is okay). Remember that each number can only be used once since you only have one of each. For example, you can't make the address 223 since you only have one brass house number with the digit 2 on it. Given these conditions, how many different addresses can I form from the 4 brass numbers?

Problem 7 **Time = _____**

What <u>fractional</u> part of the large square is shaded? _____
YOUR ANSWER MUST BE AS A FRACTION!



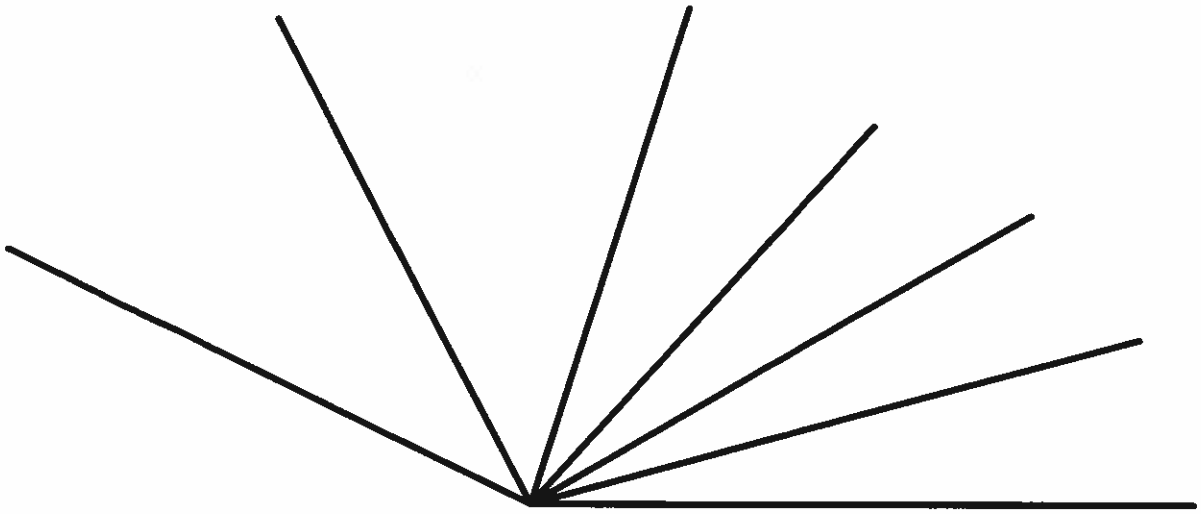
Problem 8 **Time = _____**

Mr. Carrow received a membership card to Chucky Cheeses. The lifetime membership card showed a five-digit number, of which each digit was different. When he turned the card upside down, he found the resulting number was 7920 more than the original one. What was his membership number?

Membership number was _____.

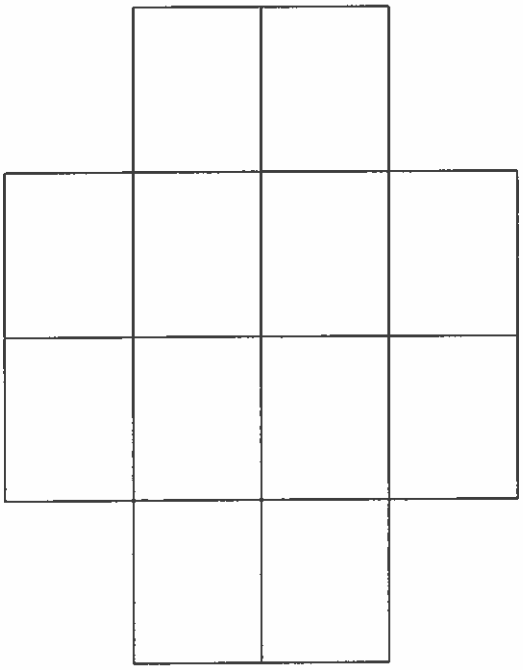
Problem 9 **Time = _____**

How many different angles less than 180° are there in the figure below? _____



Problem 10 **Time = _____**

Fill in the blanks with each of the numbers 1-12 such that no two consecutive numbers are adjacent to one another either vertically or horizontally.



Logic 3 ANSWERS

(Due February 15, 2019)

Name _____ **Period** ____

Problem 1 Time = ____ Phrase 1: _____

Phrase 2: _____

Problem 2 Time = ____ 1st _____ 2nd _____ 3rd _____

4th _____ 5th _____

Problem 3 Time = ____ O = _____ D = _____ L = _____ E = _____

Problem 4 Time = ____ Sentence is _____

Problem 5 Time = ____ Answer is _____

Problem 6 Time = ____ Number of different addresses is _____.

Problem 7 Time = ____ Fractional part shaded is _____.

Problem 8 Time = ____ Membership number is _____.

Problem 9 Time = ____ Number of angles is _____.

Problem 10: Time = ____