

# Logic 3: Due February 23, 2018

Name \_\_\_\_\_

Period \_\_\_\_\_

Problem 1 Time = \_\_\_\_\_

Find the whole numbers that make the following equation true:

$$a^2 + b^2 + c^2 = 2008$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad}$$

Problem 2 Time = \_\_\_\_\_

What is the next letter in this series?

C C D E G J O W J

**Problem 3**      **Time = \_\_\_\_\_**

Find a, b, c, d, e, and f given the following conditions:

$$a(b + c + d + e + f) = 184$$

$$b(a + c + d + e + f) = 225$$

$$c(a + b + d + e + f) = 301$$

$$d(a + b + c + e + f) = 369$$

$$e(a + b + c + d + f) = 400$$

$$f(a + b + c + d + e) = 525$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad} \quad d = \underline{\quad} \quad e = \underline{\quad} \quad f = \underline{\quad}$$

**Problem 4**      **Time = \_\_\_\_\_**

**I made a purchase under the following conditions:**

**There was a 25% discount because the item was on sale, another 10% discount because of the size of the purchase, and a 3% discount for my good looks (the woman was blind). These discounts were successive, meaning they were taken one after the other. In other words, I did not get a total of 38% off, but 25% off, then 10% off that new price, and then 3% off that new price.**

**If I paid \$195.89, what was the original purchase price before any discounts were given?**

Problem 5      Time = \_\_\_\_\_

Find the value of the letters in the true division problem.

$$\begin{array}{r} \text{H I} \\ 8 \overline{) \text{M O M}} \\ \underline{- \text{M A}} \\ \text{O M} \\ \underline{- \text{O M}} \end{array}$$

M = \_\_\_\_\_

H = \_\_\_\_\_

I = \_\_\_\_\_

O = \_\_\_\_\_

A = \_\_\_\_\_

Problem 6      Time = \_\_\_\_\_

Use your multiplying and subtracting skills to help you figure out what the ? must be. Use the four examples I gave you to help figure out the pattern.

5	1	4
8	221	3
2	7	6

5	2	5
2	617	2
5	2	5

2	1	2
1	12	1
2	1	2

3	4	5
1	163	10
2	2	6

2	2	3
6	?	5
5	1	4

? = \_\_\_\_\_

**Problem 7**      **Time = \_\_\_\_\_**

**From the letters given, fill in the blanks to make real statements.**

**Example:**      **Given letters – BLAUDISGITLLN**

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**Answer:**

T	A	L	L
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B	U	I	L	D	I	N	G	S
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**Question 1**      **Letters: PUELEGPYLO**

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**Question 2**      **Letters: KSEUYJFNON**

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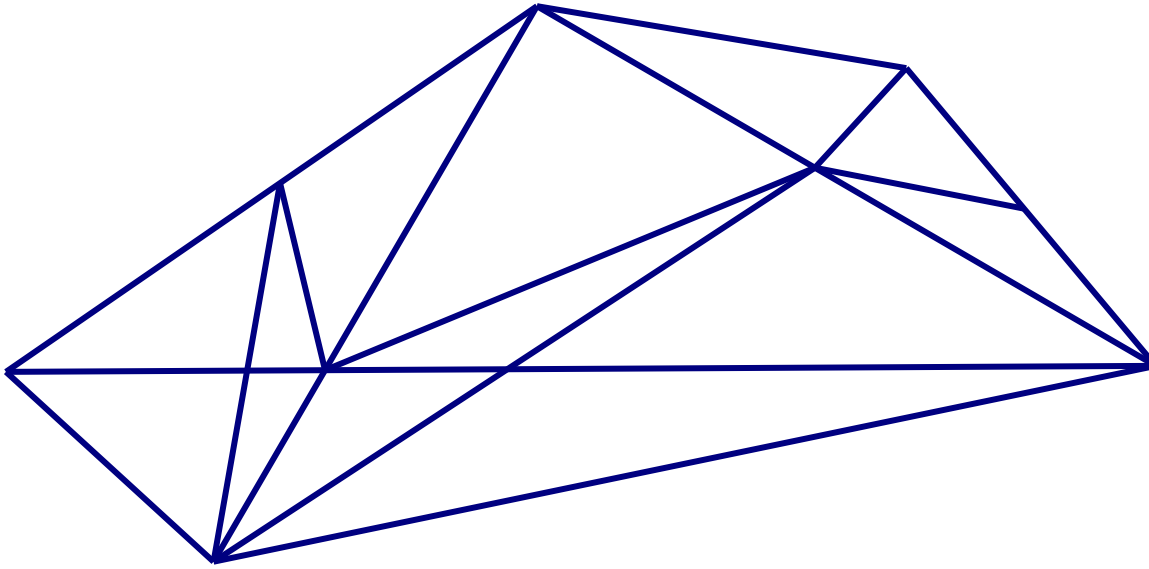
**Question 3**      **Letters: LEBOEYSPRAM**

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**Problem 8**      **Time = \_\_\_\_\_**

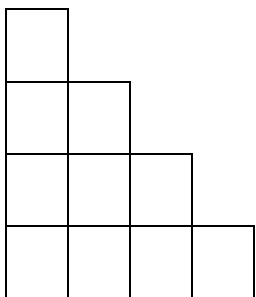
**How many different triangles do you see?**



**Number of triangles = \_\_\_\_\_**

**Problem 9**      **Time = \_\_\_\_\_**

Fill in the blanks with each of the numbers 1-10 such that no two consecutive numbers are adjacent to one another vertically, horizontally, or cornerwise.



**Problem 10**    **Time = \_\_\_\_\_**

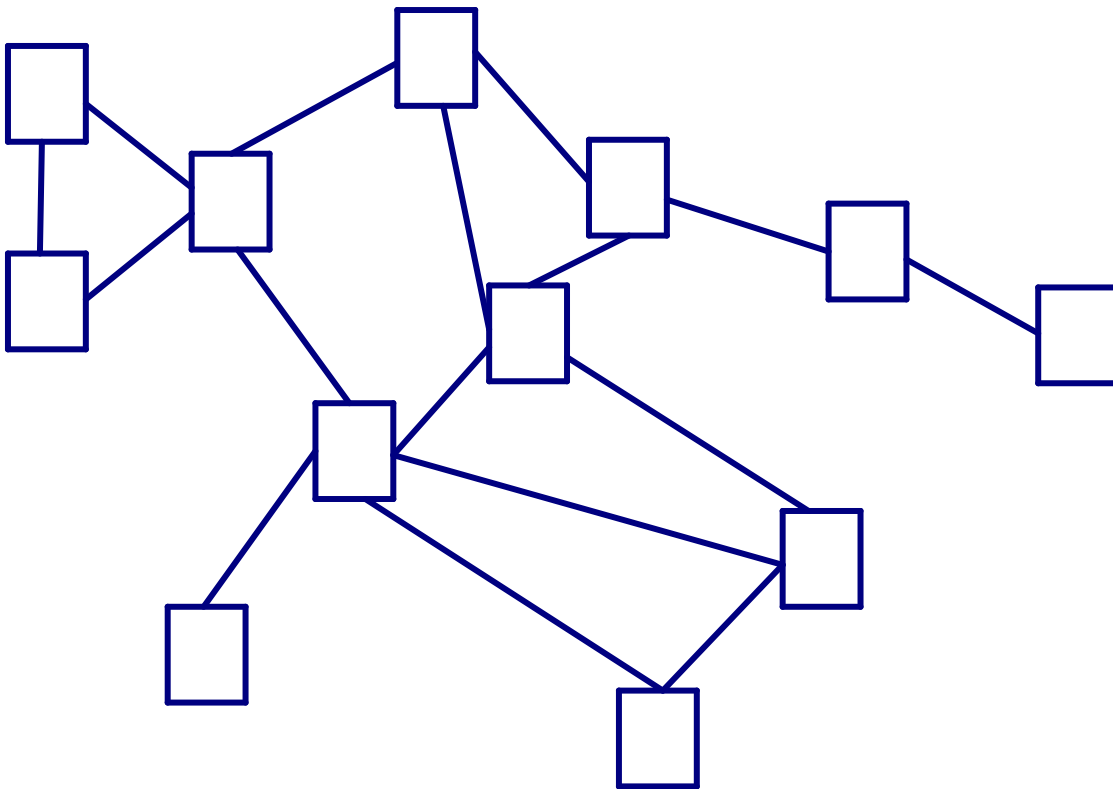
(Here is a problem that I gave about 20 years ago. I don't remember if I made it up or got it from someone, so I will not take credit for it.)

There are twelve friends who have been chatting on the phone:  
Aaron, Beth, Chad, Dina, Eddie, Fred, Gillie, Hannah, Ira, Juan, Kevin, and Leon.

Below is a map of their twelve houses. A line connecting two houses shows which two people talked on the phone. Use the map and the clues to figure out in which house each person lives. Fill in the blanks with the person's **first initial** when you have figured out where he or she lives.

Here is the list of who talked to whom last night:

- |               |                |                |               |
|---------------|----------------|----------------|---------------|
| Gillie – Ira  | Beth – Juan    | Dina – Eddie   | Dina – Gillie |
| Aaron – Juan  | Hannah – Eddie | Dina – Ira     | Chad – Dina   |
| Beth – Kevin  | Eddie – Fred   | Hannah – Aaron | Chad – Juan   |
| Aaron – Eddie | Beth – Chad    | Juan – Eddie   | Leon – Kevin  |



# Logic 3 Answers

(Due Friday, February 23, 2018)

Name \_\_\_\_\_

Period \_\_\_\_\_

**Problem 1** Time = \_\_\_\_\_

a = \_\_\_\_\_ b = \_\_\_\_\_ c = \_\_\_\_\_

**Problem 2** Time = \_\_\_\_\_

Answer is \_\_\_\_\_

**Problem 3** Time = \_\_\_\_\_

a = \_\_\_\_\_ b = \_\_\_\_\_ c = \_\_\_\_\_

d = \_\_\_\_\_ e = \_\_\_\_\_ f = \_\_\_\_\_

**Problem 4** Time = \_\_\_\_\_

Original price was \_\_\_\_\_

**Problem 5** Time = \_\_\_\_\_

M = \_\_\_\_\_ H = \_\_\_\_\_ I = \_\_\_\_\_

O = \_\_\_\_\_ A = \_\_\_\_\_

**Problem 6** Time = \_\_\_\_\_

? = \_\_\_\_\_

**Problem 7** Time = \_\_\_\_\_

Question 1 = \_\_\_\_\_

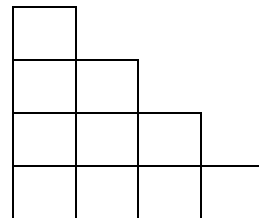
Question 2 = \_\_\_\_\_

Question 3 = \_\_\_\_\_

**Problem 8** Time = \_\_\_\_\_

Number of triangles = \_\_\_\_\_

**Problem 9** Time = \_\_\_\_\_



**Problem 10** Time = \_\_\_\_\_

