



2016 - 2017 Academic Junior High Decathlon

Logic Study Guide

Practice Problems and Practice Tests



Patterns

Extending Patterns:

Write the next two terms in the pattern, then describe the pattern either with words or as an algebraic equation.

Example: 1, 3, 5, 7, 9, 11, 13

What is the pattern? Odd numbers

1, 2, 3, 5, 7, 11, _____, _____ What is the pattern? _____

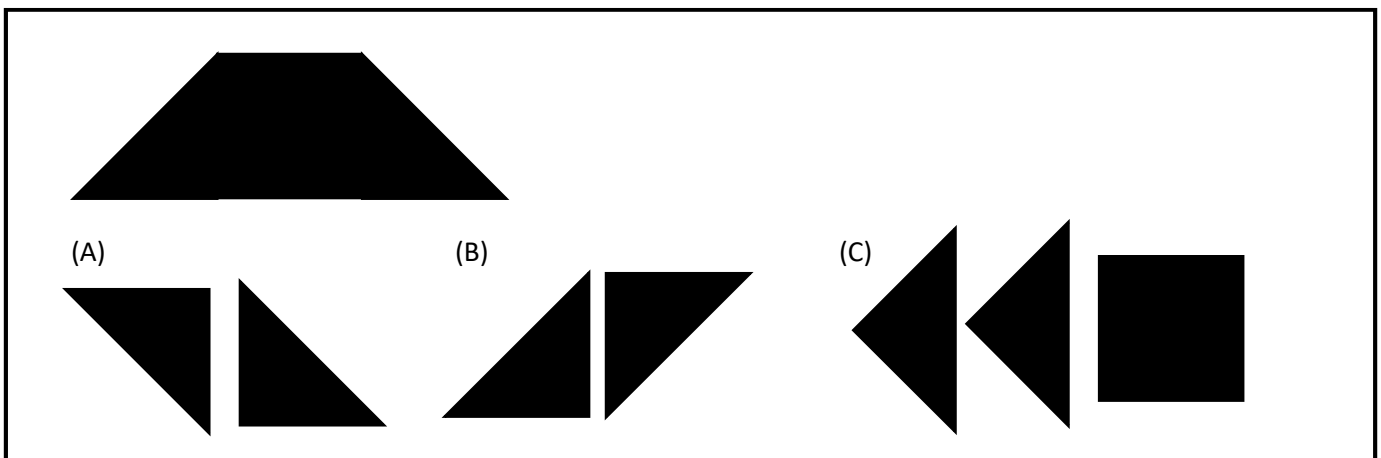
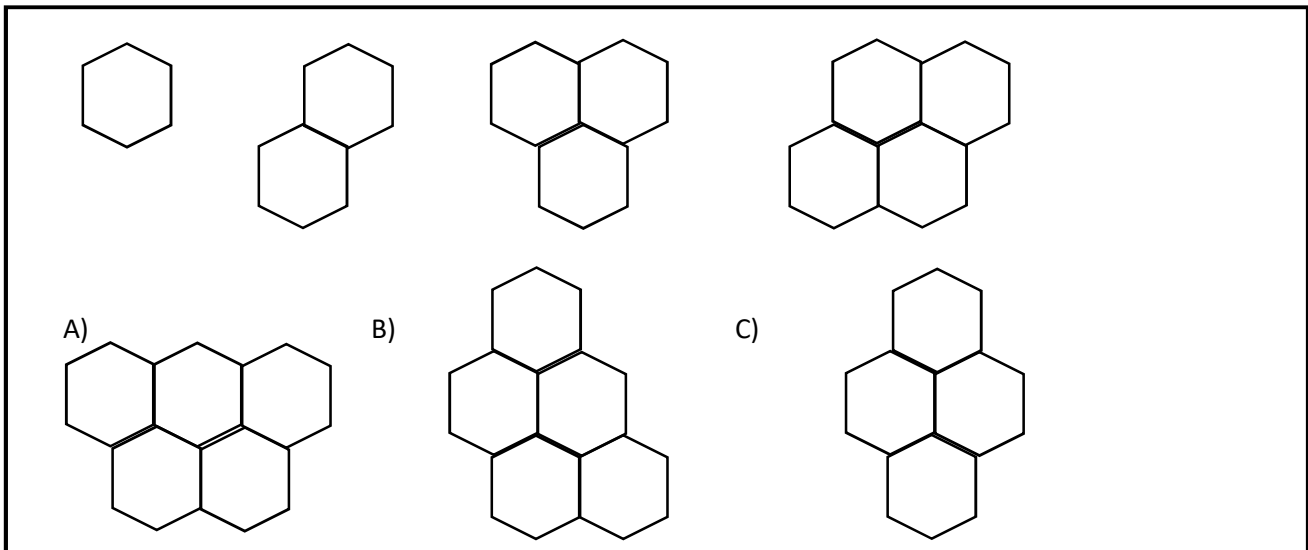
1, 2, 3, 5, 8, 13, _____, _____ What is the pattern? _____

3, 9, 27, 81, _____, _____ What is the pattern? _____

$\frac{3}{2}$, 2, $\frac{5}{2}$, 3, _____, _____ What is the pattern? _____

1, 4, 9, 16, 25, _____, _____ What is the pattern? _____

Determine which object is the next term in the pattern:



Patterns

Determine which letter is next in the pattern:

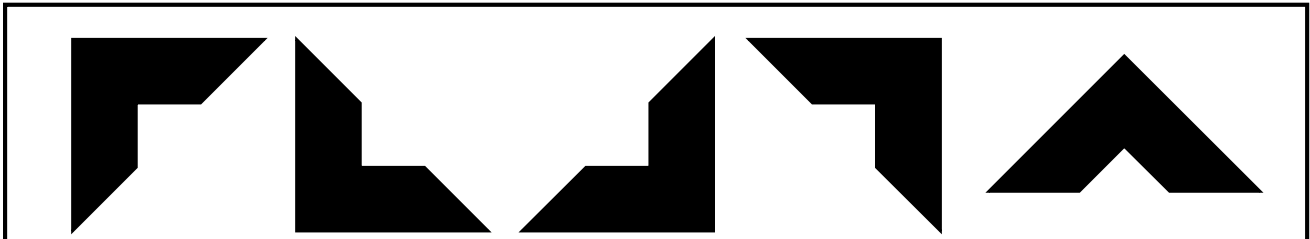
A B D G K P _____

What should go in the black square to complete the grid? _____

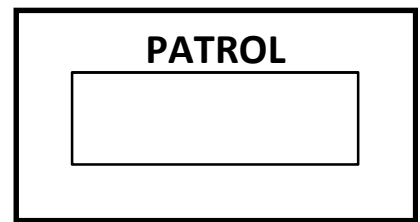
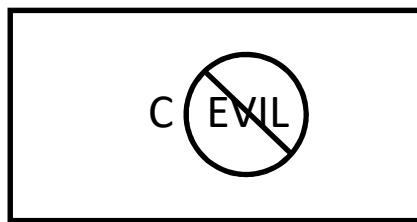
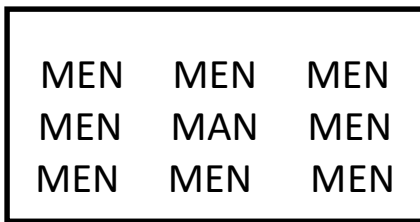
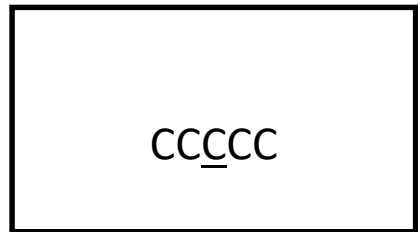
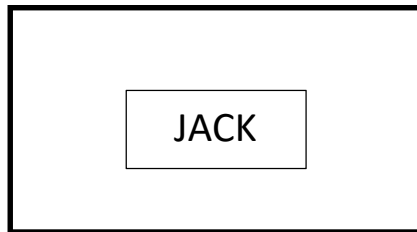
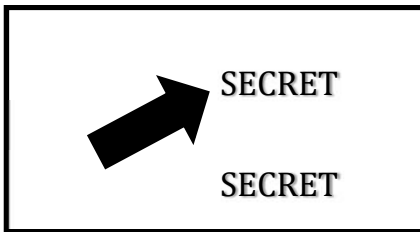
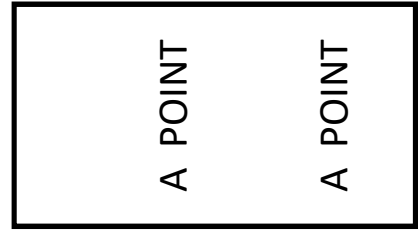
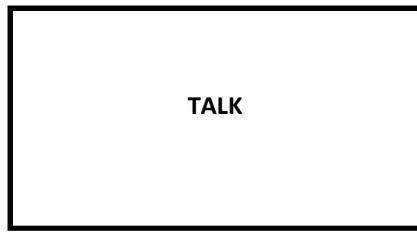
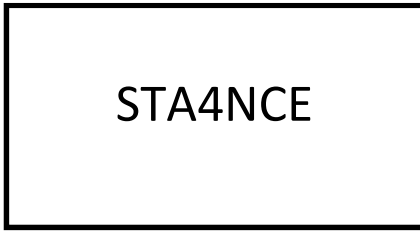
| | | | | | |
|-----|-----|----|----|-----|----|
| | II | I | | II | I |
| II | | I | II | | I |
| | I | I | II | I | I |
| III | | ? | | | II |
| | III | | II | | I |
| I | | II | | III | |

Circle the object that does not belong in the sequence:

A F N H W



Using the hints listed above, see if you can figure out the solution for these rebus puzzles:



Pictogram / Rebus Practice Puzzles

Rebus puzzles use pictures, symbols, and letters to represent a common word, phrase, or saying.
 Can you find the solutions to these rebus puzzles?

Thumb Thumb
 Thumb Thumb
 Thumb Thumb...

WALKING
 ICE


Get
 Get It
 Get
 Get

Sailing
 ccccccc

ECNALG

BIRD

R
 O
 R O A D S
 D
 S

 SECRET
 SECRET
 SECRET
 SECRET

PAWALKRK

GENERA__TION

LI1FETI1ME

VEEGTABLES
 SELBATVEGE
 GETAVEBLES
 VEGETLBAES

KenKen

Within each KenKen puzzle, the grid is divided into different shapes, shown by heavy outlines. Within each heavily outlined shape, use the indicated math operator (addition, subtraction, multiplication, or division) to reach the solution indicated next to the math operator.

In these KenKen puzzles, the digits 1 through 4 appear exactly once in each row and column:

#1

| | | | |
|-----|----|----|----|
| 36x | 2÷ | | 2÷ |
| | | 8+ | |
| 1- | 8x | | |
| | | 2- | |

#2

| | | | |
|----|-----|----|----|
| 6+ | 12x | | 6x |
| | | 8x | |
| 8+ | 2 | | 6+ |
| | | | |

#3

| | | | |
|-----|----|----|----|
| 6+ | 3- | | 1- |
| | | 8x | |
| 12x | 1- | | |
| | | 6x | |

Now, try these KenKen puzzles that use the digits 1 through 6:

#4

| | | | | | |
|-----|-----|-----|-----|----|----|
| 2÷ | | 15x | | | 1- |
| 8+ | | 4 | 2÷ | 2- | |
| | 14+ | | | | 1- |
| 10x | 4 | | 10+ | | |
| | 3÷ | | | 4 | 7+ |
| 15x | | | 12x | | |

#5

| | | | | | |
|-----|-----|-----|----|-----|-----|
| 4÷ | | 60x | | | 6x |
| 20x | 15x | | 5- | | |
| | 2- | | 9+ | | 4- |
| 36x | 6x | 6 | | 10x | |
| | | 4- | 3÷ | | 16+ |
| | | | | | |

In these KenKen puzzles, the digits 1 through 7 appear exactly once in each row and column.

#6

| | | | | | | |
|------|-----|------|-----|------|-----|------|
| 14 x | | 5 x | | 2 - | | 1 - |
| 15 x | | 5 + | | 1 - | | |
| 6 - | | 4 - | | 15 x | | 20 x |
| 6 x | | 15 x | 3 - | 6 x | 7 x | |
| 2 ÷ | | | | | | 13 + |
| 12 x | 1 - | 2 ÷ | | 3 + | | |
| | | 14 x | | 20 x | | |

#7

| | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|
| 8+ | | 1 - | | 42x | | 1- |
| | 20x | 30x | | 7x | | |
| 20x | | 42x | | 2÷ | | 12x |
| | 19+ | 6 - | 2 ÷ | 6x | 1 - | |
| | | | | | | 30x |
| 7÷ | 2x | 6x | | 20x | | |
| | | 7+ | | 18+ | | |

Sudoku Problems

Hint: If you are able to narrow down the possible digits for a square, it is sometimes helpful to write down the possible digits as “place holders”.

For example, in Sudoku #1, in the upper right-hand box, the digits 3 and 6 can only be in the empty squares in column 7, rows 2 and 3, because there are 3’s and 6’s already in row 1 and column 9.

A 3 and a 6 may be written down in the two empty squares as “place holders”, as shown, until it is determined which square is 3 and which square is 6.

Sudoku #1

| | | | | | | | | |
|---|---|---|---|---|---|-----|---|---|
| 3 | | | | 6 | 8 | | | 1 |
| 4 | | | | 9 | 1 | 3,6 | 2 | |
| 7 | 9 | | | | | 3,6 | 4 | |
| | | | 8 | | | | | 3 |
| | 3 | 6 | | | | 8 | 1 | |
| 9 | | | | | 3 | | | |
| | 5 | | | | | | 3 | 4 |
| | 4 | | | 5 | | | | 6 |
| 1 | | | 6 | 2 | | | | |

Sudoku #2

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 9 | | 3 | 6 | |
| | | | 8 | | 5 | | | 4 |
| 5 | 6 | | | 1 | | | | |
| 1 | | 4 | 6 | 8 | | 5 | 9 | 7 |
| | | | | 5 | | | | |
| 6 | 5 | 9 | | 4 | 3 | 2 | | 1 |
| | | | | 2 | | | 5 | 8 |
| 8 | | | 1 | | 6 | | | |
| | 2 | 7 | | 3 | | | | |

Sudoku #3

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2 | | 3 | | | 9 | | |
| | 6 | | | | | | | 4 |
| 7 | | 8 | 4 | | | 5 | | |
| 5 | | 7 | 1 | | | | 8 | 9 |
| | | 2 | 5 | | 9 | 3 | | |
| 6 | 9 | | | | | 2 | | 5 |
| | | 4 | | 1 | 3 | 8 | | 6 |
| 8 | | | | | | | 9 | |
| | | 9 | | | 7 | | 2 | |

Sudoku #4

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 8 | | 9 | | 7 | 6 | | | |
| 4 | | | 8 | 2 | | | | |
| | | | 9 | | | | | 3 |
| | | 4 | 7 | 8 | 3 | 6 | | |
| 2 | 3 | | | | | | 5 | 8 |
| | | 8 | 6 | 5 | 2 | 4 | | |
| 3 | | | | | 7 | | | |
| | 7 | | | 9 | 8 | | | 5 |
| | | | 2 | 3 | | 8 | | 6 |

Wordoku Problems

The word used in each wordoku is indicated next to the puzzle number. Letters may only be used once in each row, column, and outlined box.

Wordoku #1: COLUMN

| | | | | |
|---|--|---|---|-----|
| C | | | | O |
| | | | M | N |
| | | L | | U |
| M | | C | O | |
| L | | | | |
| | | O | | M C |

Wordoku #2: WATSON

| | | | | |
|---|---|---|---|---|
| N | W | | | T |
| | | O | | A |
| S | | | | |
| | A | | | N |
| | | | | S |
| | O | | W | |

Wordoku #3: HOLMES

| | | | | | |
|---|---|---|---|---|---|
| H | | L | S | | |
| | O | | | M | |
| | | S | | | |
| M | | | L | | S |
| | | | O | | E |
| E | | | M | | H |

Wordoku #2: EDUCATION

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| D | | N | I | | T | | O | |
| O | | | | | N | | | T |
| | C | T | | | E | U | | I |
| | | D | | | | T | | N |
| | | | N | C | D | | | |
| E | | C | | | | O | | |
| U | | E | T | | | D | I | |
| N | | | E | | | | | A |
| | T | | A | | O | N | | E |

Wordoku #3: INSPECTOR

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| O | | T | | R | S | | | P |
| | C | | E | | | S | O | |
| | R | E | | | | | N | |
| | I | | O | | | | | E |
| N | | | S | E | T | | | O |
| E | | | | | C | | P | |
| | O | | | | | P | S | |
| | E | C | | | I | | R | |
| P | | | R | C | | E | | T |

Cryptofamilies are cryptograms that use a list of related words. Each box below contains a cryptofamily; each box uses a different code. Use the hint to help break the codes.

| Into the Woods | The Amusement Park | National Parks |
|----------------|--------------------|------------------|
| RWBR | GRTTOD EJRA | TVQYE DQYNLY |
| VLXJOLXJ | TPAART VPSDYRT | NCPPLXWBLYC |
| A'NIEWA | VPYYPM VSMFU | CFCVTPQECW |
| GUJUBF | GIM JPIDR | ECQBZ FQPPCN |
| XLNOUBF | VSTPIDRA | NLWCJKBC |
| XLNODUEW | VSTMBSA HSZR | DQVPWGQE DQFCVYW |
| FGIAR ARIEUWA | NIZQRT VSTD | GVNDC DQYNLY |
| IYRSIEA | QPQVPTM | DVQBCV PQIC |

Now, try to find the codes for the following quotes from famous people.

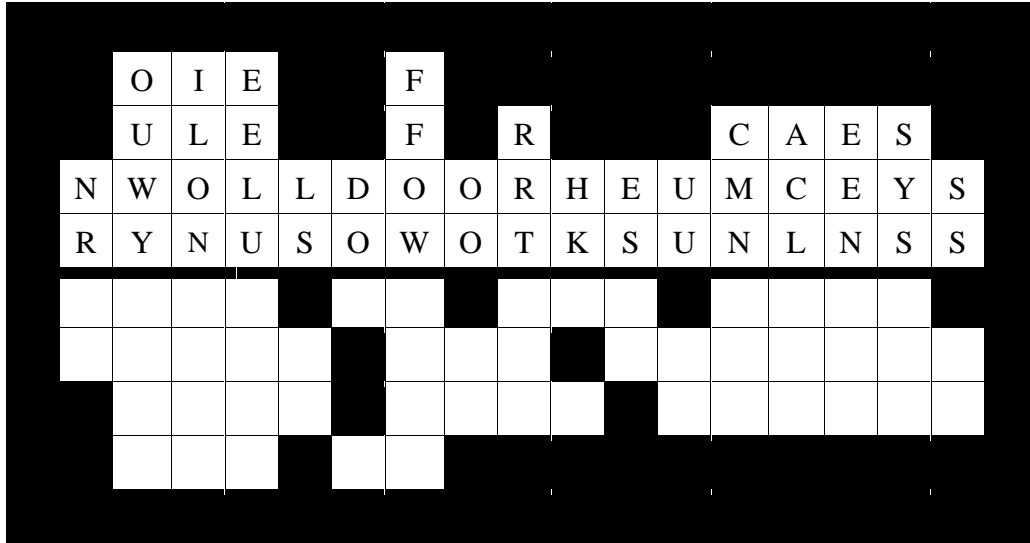
Note, the famous person's name is listed at the end of each cryptogram. A different substitution code is used for each cryptogram.

“K NZRD Z CFDZU GNZG LYD CZH GNKX YZGKLY SKPP FKXD JQ ZYC PKRD LJG GND
 GFJD UDZYKYB LV KGX EFDDC. ‘SD NLPC GNDXD GFJGNX GL TD XDPV—DRKCDYG,
 GNZG ZPP UDY ZFD EFDZGDC DAJZP.’” -UZFGKY PJGNDF IKYB, MF.

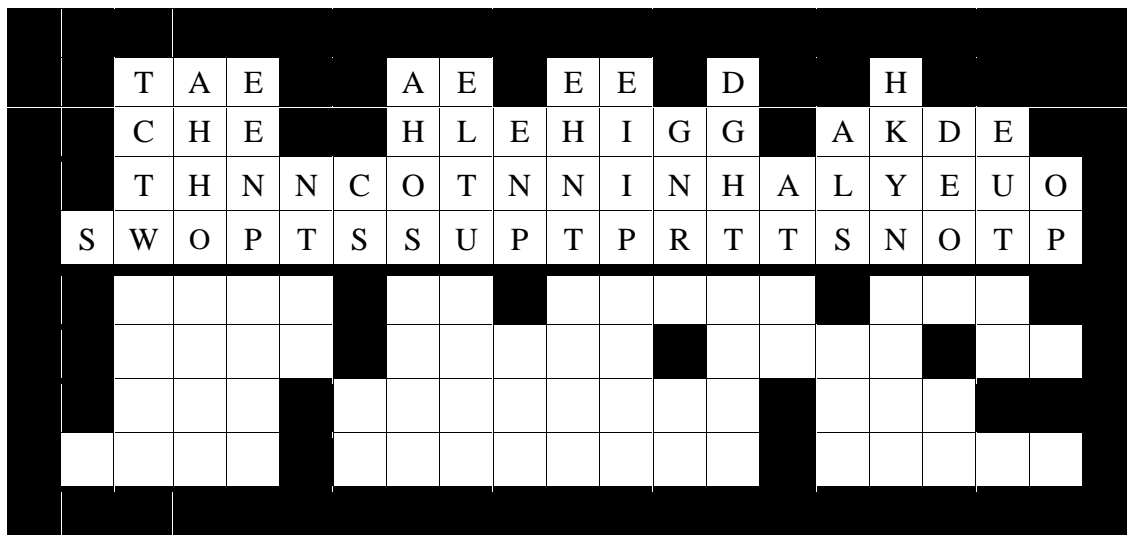
“UKT XQYT IQO DYT SPAT IQOYFTSH, UKT STFF IQO DYT SPAT DZIQTZ TSFT,
 RKPBK XDAT IQO OZPEOT.” -RDSU GPFZTI

Dropdown Quotation

Dropdown Puzzle #1



Dropdown Puzzle #2



Test Time

The coaches from St. Hopeful Academy and Holy Faith School are proctoring practice tests for the Academic Decathlon. Each of the coaches from St. Hopeful Academy (one is Ms. King) has been paired with a coach from Holy Faith School (one is Ms. Makol) to proctor on a specific test date in the subject they coach. Determine the name of each coach, their partner, the subject they coach, and the date of the test they are proctoring.

- Mr. Barry, (who is not proctoring with Dr. Eloise) is not coaching Science.
- Mr. Larry is not proctoring with Dr. Eloise or with a Math coach.
- Dr. Axel's test date is exactly 4 days before Ms. Allie's, whose date is before that of the two coaches proctoring English.
- Of Dr. Eloise and Dr. Axel, (neither of whom coach History), one will proctor the practice test on April 4 and the other will proctor the practice test on April 20.
- Ms. Helen's test date is earlier than Mr. Larry's, but later than that of the two coaches of Religion (who will not test on April 4.)
- The two Science coaches will test before Mr. Reed, who will test before Mr. Garrett.
- The doctor who coaches English set a later date for the test than the Math coaches, whose date is immediately after Mr. Barry's.

| | | St. Hopeful Coaches | | | | | Subject | | | | | Test Date | | | | |
|--------------------|-------------|---------------------|-----------|----------|-----------|----------|---------|---------|---------|------|----------|-----------|---------|----------|----------|----------|
| | | Dr. Axel | Mr. Barry | Ms. King | Mr. Larry | Mr. Reed | English | History | Science | Math | Religion | April 4 | April 8 | April 15 | April 16 | April 20 |
| Holy Faith Coaches | Ms. Allie | | | | | | | | | | | | | | | |
| | Dr. Eloise | | | | | | | | | | | | | | | |
| | Mr. Garrett | | | | | | | | | | | | | | | |
| | Ms. Helen | | | | | | | | | | | | | | | |
| | Ms. Makol | | | | | | | | | | | | | | | |
| Test Date | April 4 | | | | | | | | | | | | | | | |
| | April 8 | | | | | | | | | | | | | | | |
| | April 15 | | | | | | | | | | | | | | | |
| | April 16 | | | | | | | | | | | | | | | |
| | April 20 | | | | | | | | | | | | | | | |
| Subject | English | | | | | | | | | | | | | | | |
| | History | | | | | | | | | | | | | | | |
| | Science | | | | | | | | | | | | | | | |
| | Math | | | | | | | | | | | | | | | |
| | Religion | | | | | | | | | | | | | | | |

| Coach | Proctoring Partner | Test Date | Subject |
|-------------|--------------------|-----------|---------|
| Ms. Allie | | | |
| Dr. Eloise | | | |
| Mr. Garrett | | | |
| Ms. Helen | | | |
| Ms. Makol | | | |

Community Planning

You have just been appointed by the community planning commission to design nine new neighborhoods for the community master plan. The planning commission has determined that each new neighborhood shall have one each of the following facilities: arena, bakery, church, grocery store, housing, offices, park, restaurant, and school. Each neighborhood is divided on the map into nine sections and each neighborhood border is shown by the dark borders on the map. The planning commission has also determined that no more than one of each facility may be located in each column and row on the map. Using the abbreviations for each type of facility listed in the table to the right of the map, fill in the new community master plan map.

Community Master Plan Map

| | | | | | |
|---|---|---|---|---|---|
| C | P | | | | |
| H | | | | | S |
| | S | | | | |
| | | | O | | H |
| | | A | | | |
| A | | | | H | |

Table of Facilities

A = Arena

C = Church

H = Housing

O = Offices

P = Park

S = School

Cross Math

Each row and column is a mathematical equation. Fill in the empty boxes in each column and row, using the numbers from 1 to 9, to complete each equation. Each digit from 1 to 9 may only be used once in the puzzle.

For this Cross Math puzzle, math order of operations apply.

1)

| | | | | | | |
|----|---|----|---|---|---|----|
| | ÷ | | x | | = | 10 |
| + | | x | | + | | |
| | - | | + | | = | 9 |
| - | | + | | - | | |
| | x | | + | | = | 17 |
| | | | | | | |
| 12 | | 14 | | 1 | | |

2)

| | | | | | | |
|---|---|---|---|---|---|----|
| | + | | - | | = | 1 |
| x | | ÷ | | - | | |
| | - | | ÷ | | = | 3 |
| - | | + | | x | | |
| | + | | + | | = | 14 |
| | | | | | | |
| 3 | | 5 | | 6 | | |

Leap Frog #1

Below is a list of terms related to the U.S. Constitution and the law. Each term is a two-word term. The letters of each word in the term are in the correct order, but the letters overlap. Separate the letters to find the term.

1. CLOMAMOWN _____

2. DPROUCESES _____

3. COSUPURERTME _____

4. GRAJUNDRY _____

5. ELCOLELECTGOREAL _____

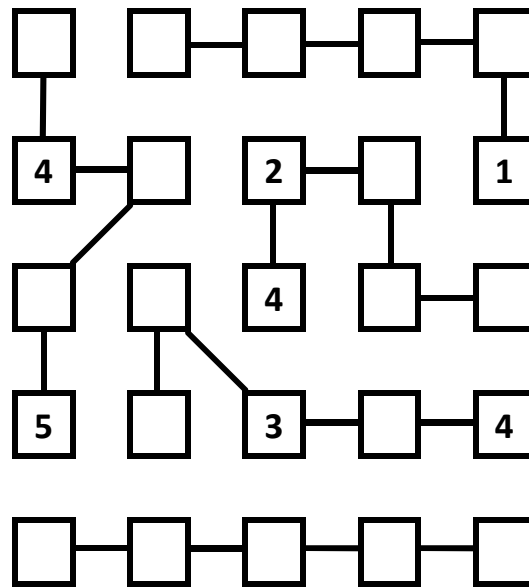
Each box contains a list of related words with the letters in each word scrambled. The theme for each list is given at the top of each box. Unscramble the letters to find the words.

| School Time | Sports Time | Summer Time |
|-------------|-----------------|----------------|
| AABCKKP | ABFLLOOT | CEI ACEMR |
| CEERSS | EINNST | AACINOTV |
| ACEEHRT | AABBEKLLST | EMMRSU CHLOOS |
| ESSTT | ACGIMNSSTY | NOSW CENOS |
| CCEEINS | EGILNRSTW | AESTT AFIR |
| AACEHIMMSTT | AABBELLS | GIIMMNSW |
| EGHILNS | CEHKOY | ABCEH |
| ABILRRY | CCEORS | AEEMMNSTU AKPR |
| AACEEFIRT | ABELLLLOVY | ACIGMNP |
| ACIILNPPR | CEFGINN | CCIINP |
| BEKOOSTTX | CCIGLNY | AEFMRRS AEKMRT |
| BEKNOOOST | EFGIRU AGIKNST | FIRTU EIP |
| CEILNPS | ACKRT ADN DEFIL | OPRSST |

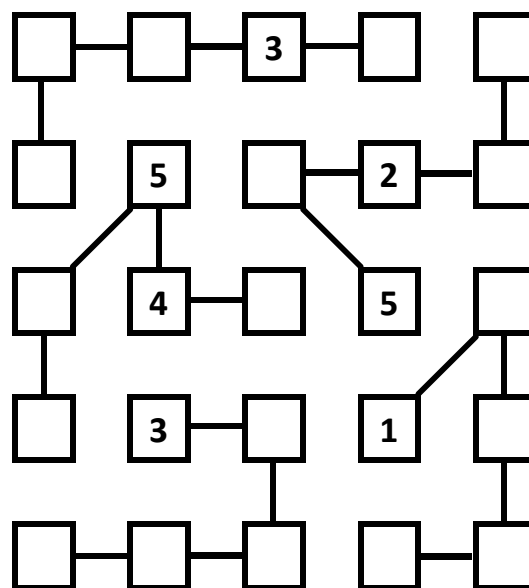
Square Routes

Fill in the empty squares so that all the digits from 1 to 5 appear exactly once in each row, column, and series of squares connected by lines.

Puzzle # 1



Puzzle # 2



Star Grids

In star grid puzzles, stars are arranged in the grid based upon the numbered squares, which indicate how many stars are placed in squares immediately next to them. Adjacent squares include squares to the right, left, above, below, and diagonal of the numbered square. There is never more than one star in a square and not all the squares contain stars. Here is an example:

Example:

| | | |
|---|---|---|
| | | 2 |
| | 5 | |
| 2 | | |
| | 2 | 2 |

Solution:

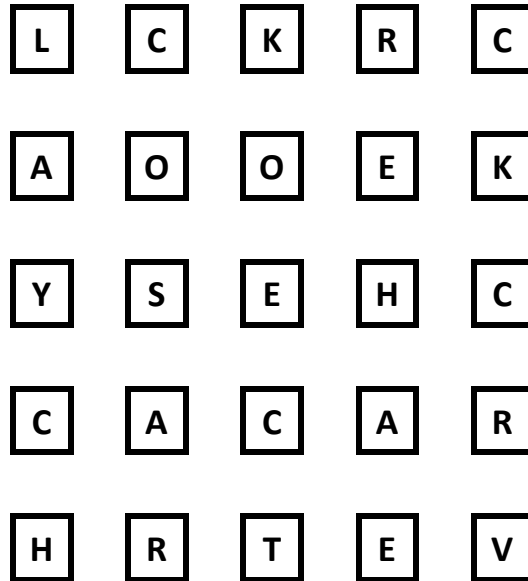
| | | |
|---|---|---|
| | ★ | 2 |
| ★ | 5 | ★ |
| 2 | ★ | ★ |
| | 2 | 2 |

Based on the numbered squares in the grid below, draw a star in each of the squares where a star is missing.

| | | | | | | | | | |
|--|--|---|---|---|--|---|---|---|---|
| | | 3 | | | | | | | |
| | | | | 2 | | 3 | | | |
| | | 5 | | | | | | | 2 |
| | | | | 1 | | 3 | | 3 | |
| | | 2 | | | | | | | |
| | | | 1 | | | | 3 | | |
| | | | | 1 | | | | | |

Square Routes

Hidden in each diagram are five five-letter words beginning with the same letter. Draw a continuous line connecting each letter of a five-letter word without crossing the line showing the letters of another word. Each word begins with the same letter of the alphabet.



1) Sudoku (800 points)

To complete the puzzle below, fill in each row, column, and 3 by 3 square with the digits 1 through 9. Each digit may only be used once in each row, column, and 3 by 3 square.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 5 | | | 2 | 6 |
| | 9 | | 3 | | | 1 | 4 | |
| 2 | | 1 | | | 7 | | | |
| 3 | 5 | | | | | 9 | | 2 |
| 6 | 1 | 4 | 9 | | 5 | | 8 | |
| | | 9 | | | | | | |
| | | | | | | | | |
| 1 | 3 | 5 | | 7 | | | | 9 |
| | 6 | | | | | 5 | 3 | 8 |

2) Hungry Bugs (200 points)

Adam Ant takes two hours to build a storage hole for his winter food supply. Gary the Grasshopper needs three hours to complete an identical storage hole for his food. After Adam Ant and Gary the Grasshopper complete their individual holes, they decide to work together to build another identical storage hole to share. Assuming that the bugs do not interfere with each other's work, how long will it take Adam Ant and Gary the Grasshopper to complete their shared hole?

Answer: _____

3) Add a Word (250 points - 50 points each)

Fill in the blanks to form six-letter words. The sum of the letter values for each word equals the total listed at the end of each row. The values for each letter in the alphabet are listed in the table below. Each letter in the word is represented by a blank. Some letters are provided to give a hint.

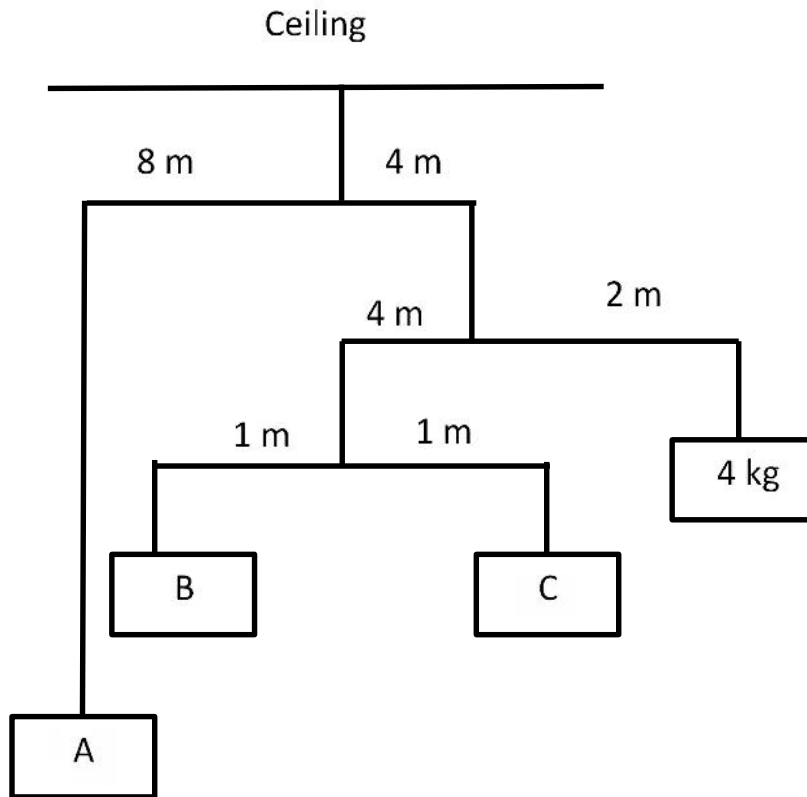
LETTER VALUES:

| | | |
|-------|--------|--------|
| A = 1 | J = 10 | S = 19 |
| B = 2 | K = 11 | T = 20 |
| C = 3 | L = 12 | U = 21 |
| D = 4 | M = 13 | V = 22 |
| E = 5 | N = 14 | W = 23 |
| F = 6 | O = 15 | X = 24 |
| G = 7 | P = 16 | Y = 25 |
| H = 8 | Q = 17 | Z = 26 |
| I = 9 | R = 18 | |

- A) $\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{P} + \underline{S} + \underline{\quad} = 58$
- B) $\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{G} + \underline{M} + \underline{\quad} = 49$
- C) $\underline{V} + \underline{\quad} + \underline{\quad} + \underline{P} + \underline{\quad} + \underline{R} = 85$
- D) $\underline{F} + \underline{\quad} + \underline{\quad} + \underline{W} + \underline{\quad} + \underline{R} = 79$
- E) $\underline{P} + \underline{R} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{R} = 83$

4) Balancing Act

(300 points - 100 points each)



Alexander Calder is installing his balanced mobile in the Guggenheim Museum. Unfortunately, during the installation, the weights that balance the mobile at points A, B, and C fell off. Can you determine the amount of weight Alexander Calder needs to use at points A, B, and C to balance the mobile?

A = _____

B = _____

C = _____

5) Cross Math

(400 points)

Use only the digits 2, 3, 8 and 9 and the function signs for addition, subtraction, multiplication, and addition to fill in the diagram so that the mathematical problems in each row and column equal the given answers.

Do not repeat a digit or a function sign within a row or column that does not contain black boxes.

Math order of operations for division, multiplication, addition, and subtraction apply.

| | | | | | | | | |
|----|---|----|---|----|---|----|---|----|
| 8 | x | 2 | - | 3 | + | 9 | = | 22 |
| | | | | | | | | |
| | | | | | | | = | 71 |
| | | | | | | | | |
| | | | | | | | = | 9 |
| | | | | | | | | |
| | | | | | | | = | 73 |
| = | | = | | = | | = | | |
| 10 | | 17 | | 21 | | 19 | | |

6) Add a Letter

(350 points - 50 points each)

Add one letter to each of the given words to form the answer to one of the clues. Each given word will only be used once. The added letter may be at the beginning, end or in the middle of the word. Place the added letter in the box next to its clue. When solved, the added letters reading from top to bottom will spell a 6-letter word.

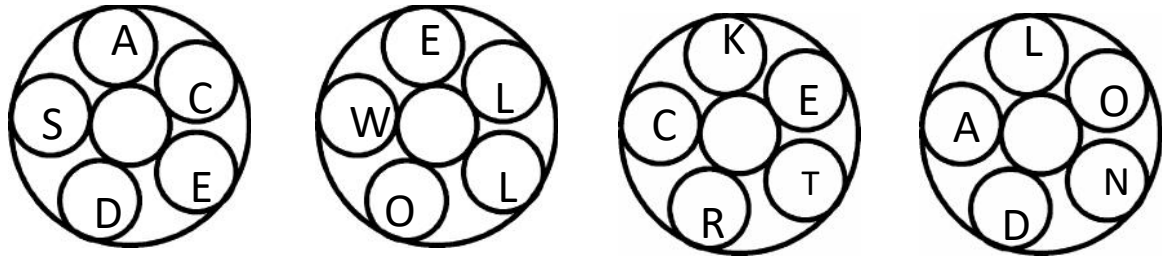
DEALS FAIRS MALES MEDAL RUSES TIRED

- A) Trees _____
- B) Awakens _____
- C) Aptitudes _____
- D) Central _____
- E) Stickers _____
- F) Layered _____

7) Word Dial

(500 points - 100 points each)

Each Word Dial below contains a word with one letter missing. When you determine the missing letter, enter it into the center of the dial. You will be able to spell a word in a clockwise direction. After you have completed the four words, rearrange the center letters to spell the name of someone important in the Catholic Church.



Word: _____
 Person: _____

8) Find the Vowels

(500 points)

The vowels and spaces between words have been omitted from this quotation. Can you replace the vowels and divide the letters into words to find the hidden quotation?

GRTMNHVTWLVS: NWHCHCCRSWHLTHYWRKNTHSRTH; SCNDWHCHBGNS
 TTHDYFTHRDTHNDCNTNSSLNGSTHRDSNDCNCPTNSRMNPWRFL.

- DLPH BRL

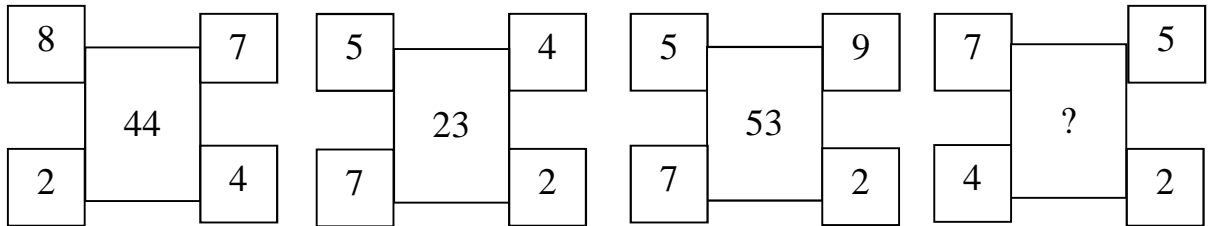
Patterns

(450 points - 150 points each)

9) If  is to , then  is to:

- A)  B)  C)  D) 

10) What should replace the (??) _____



11) If **786395** is to **658793** ,then **941682** is to _____

- A) 124968
- B) 142986
- C) 124986
- D) 129486
- E) 214986

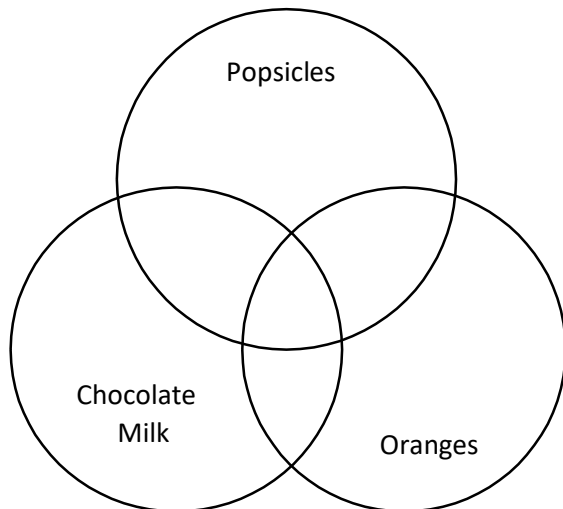
12) Favorite Foods

(500 points - 100 points each)

At lunchtime, the students may purchase oranges, popsicles, and chocolate milk from the cafeteria. Two more students buy popsicles only than oranges only. Thirty-seven students do not buy any popsicles at all. Two more students buy both oranges and chocolate milk but no popsicles than students who buy popsicles only. A total of 60 students purchase chocolate milk, but only nine of them have chocolate milk only. Twelve students buy oranges only. One more student buys popsicles only than popsicles and milk chocolate only, and three more buy both oranges and popsicles but no chocolate milk than buy oranges and chocolate milk but no popsicles.

- A) How many students buy all three food items? _____
- B) How many students buy oranges and popsicles, but no chocolate milk? _____
- C) How many students buy oranges and chocolate milk, but no popsicles? _____
- D) How many students purchase food items from the cafeteria?

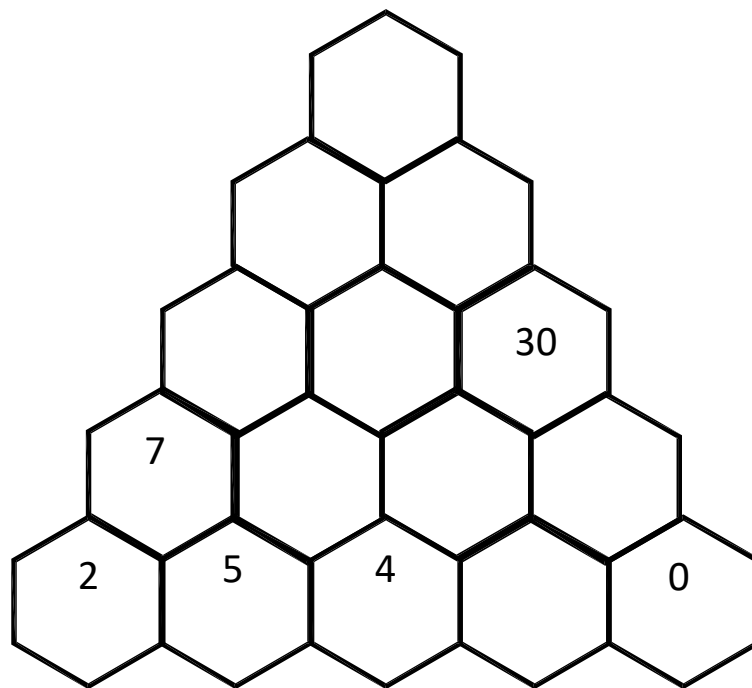
- E) How many students have popsicles only? _____



13) The Beehive

(200 points)

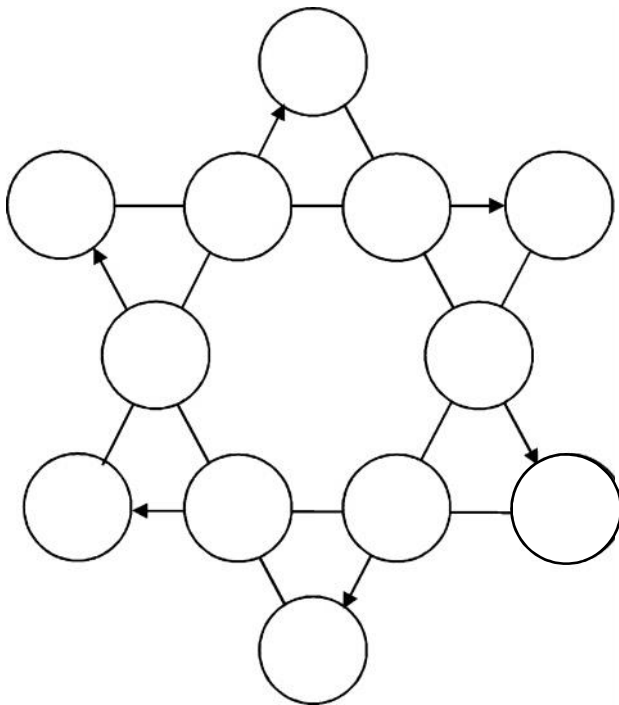
Each honeycomb in the beehive contains drone bees. The number of drone bees in each hexagon in the honeycomb is the sum of the two hexagons immediately below it. For example, the first hexagon on the left side of the bottom row of the honeycomb contains 2 drone bees. The hexagon immediately to the right contains 5 drone bees. The sum of these two hexagons is 7. The hexagon immediately above has a total of 7 drone bees (first hexagon, second row, left side). Continue to fill in the honeycomb until all of the hexagons are filled.



14) Word Star (600 points - 50 points each)

Fill in each circle with one letter so that the words from the list below read in the direction indicated by the arrows. Only six of the eleven words listed will fit into the star.

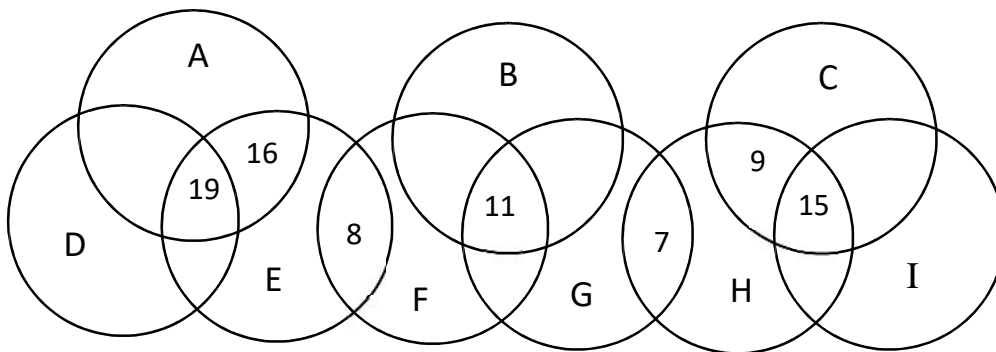
- | | | |
|------|-------|------|
| DEAD | L Aid | POLL |
| DIRT | LOAD | POOL |
| DOLL | LOOT | TOOL |
| DROP | PAID | |



15) Circle Around

(450 points - 50 points each)

Each circle, lettered A through I, has its own number value from 1 to 9. No two circles have the same value. The numbers shown in the diagram are the sums of the circles that overlap at those points. For example, 9 is the sum of circles C and H. Find the value of each circle.



- A) _____
- B) _____
- C) _____
- D) _____
- E) _____
- F) _____
- G) _____
- H) _____
- I) _____

16) Logic Grid - Restaurant Review (750 points - 50 points each)

For the school newspaper, Mrs. Gunther assigned her students to review local restaurants over their winter break. The students used a star system to rate the restaurants. Each of five different students (one was Angela) ate at five different restaurants (one was Café Metro) on a different day of the week. Each restaurant received a different number of stars (1, 4, 5, 8, or 12). From the information provided, determine the student who rated each restaurant, the day of the week each student ate at a restaurant, and the number of stars each restaurant received.

1. Betsy (who ate in a restaurant on Sunday) did not rate Pizza Pie.
2. The Shake Shack (which was rated by a student on Saturday) was given exactly 3 stars less than the restaurant Betsy rated.
3. The restaurant that was given exactly 1 star was rated on Friday.
4. Courtney gave exactly 12 stars to the restaurant she rated.
5. David (who went to Texas Tacos) isn't the student who ate in a restaurant on Tuesday.
6. Taylor gave exactly 4 stars more to the restaurant he rated than was given to Thai Palace.

Use the chart on the next page to help solve the logic grid.

Logic Grid - Restaurant Review

| | | Restaurant | | | | | Day | | | | | Stars | | | | |
|---------|----------|-------------|------------|-----------|-------------|-------------|--------|---------|----------|--------|----------|-------|---|---|---|----|
| | | Shake Shack | Café Metro | Pizza Pie | Texas Tacos | Thai Palace | Sunday | Tuesday | Thursday | Friday | Saturday | 1 | 4 | 5 | 8 | 12 |
| Student | Angela | | | | | | | | | | | | | | | |
| | Betsy | | | | | | | | | | | | | | | |
| | Courtney | | | | | | | | | | | | | | | |
| | David | | | | | | | | | | | | | | | |
| | Taylor | | | | | | | | | | | | | | | |
| Stars | 1 | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | |
| | 12 | | | | | | | | | | | | | | | |
| Day | Sunday | | | | | | | | | | | | | | | |
| | Tuesday | | | | | | | | | | | | | | | |
| | Thursday | | | | | | | | | | | | | | | |
| | Friday | | | | | | | | | | | | | | | |
| | Saturday | | | | | | | | | | | | | | | |

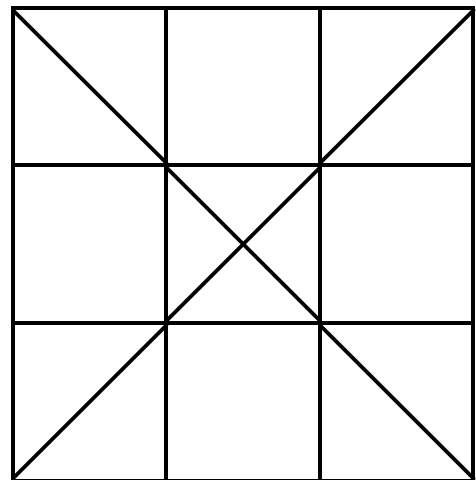
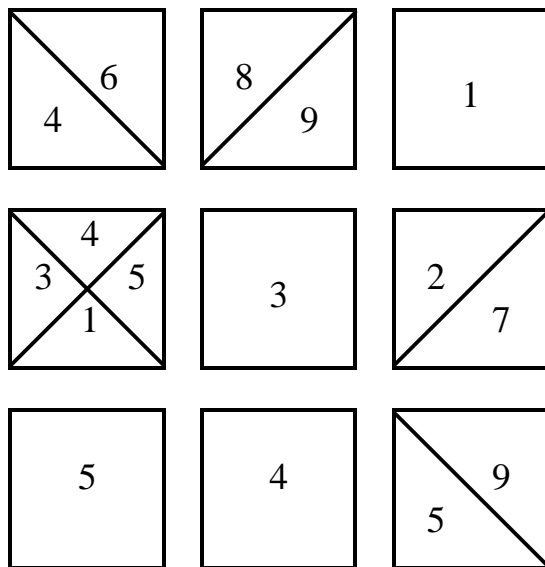
Answer:

| Student | Restaurant | Day of Week | Stars |
|----------|------------|-------------|-------|
| Angela | | | |
| Betsy | | | |
| Courtney | | | |
| David | | | |
| Taylor | | | |

17) Triangle Sums

(450 points)

The two diagonal lines divide the grid on the right into four large triangles. Place the nine squares on the left into the diagram so that the sums of the four numbers in each triangle are equal to the sums of the four numbers in the other triangles. If a square is divided by a diagonal line, place it into the grid in a square that is divided in the same way.



18) Riddle Time

(300 points)

I give a hand, but never applaud.
 I may be cut, but never sliced.
 I can build a house, but do not dwell in it.

What am I? _____

19) From A to Z
(500 points)

Insert a different letter of the alphabet into each of the 26 empty boxes to form words of five or more letters reading across. The letter you insert may be at the beginning, end or in the middle of the word.

No letter of the alphabet should appear in the shaded column more than once.

All the letters in each row are not necessarily used in forming the word.

Example: In the first row across, insert the letter F to form the word BEAUTIFUL.

| | | | | | | |
|---|---|---|---|---|--------------|---|
| A | B | C | D | E | F | G |
| H | I | J | K | L | M | N |
| O | P | Q | R | S | T | U |
| V | W | X | Y | Z | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | E | A | U | T | I | F | U | L | N | A | E | T |
| E | P | I | P | L | A | | T | I | C | E | M | N |
| R | E | A | R | H | U | | A | R | B | H | B | O |
| P | E | N | T | R | E | | U | A | L | I | T | Y |
| M | A | N | P | R | O | | I | B | I | T | E | S |
| E | X | C | H | A | R | | O | T | L | E | N | E |
| D | E | R | A | N | N | | R | T | U | R | E | M |
| C | A | N | D | S | H | | I | R | L | O | O | M |
| S | C | O | N | V | E | | T | I | O | N | E | D |
| E | S | S | P | O | N | | E | C | L | A | S | S |
| I | S | S | I | S | E | | T | E | N | C | E | L |
| B | R | E | S | A | D | | O | U | R | N | E | Y |
| P | E | S | C | O | R | | I | O | N | T | H | Y |
| N | A | S | A | L | A | | E | N | D | E | R | C |
| I | D | E | P | L | O | | H | T | S | T | E | R |
| C | A | N | D | A | P | | O | N | T | U | R | D |
| M | I | T | E | M | I | | E | S | C | O | R | P |
| T | R | E | T | R | E | | O | U | R | N | E | N |
| G | U | A | L | L | A | | A | R | D | S | T | E |
| G | A | L | L | O | P | | T | A | T | O | N | S |
| B | I | D | S | O | C | | E | T | H | Y | L | Y |
| T | H | R | O | S | E | | A | N | I | L | L | Y |
| Y | A | R | J | A | R | | D | I | S | H | O | N |
| X | S | E | C | R | E | | P | R | Y | A | R | D |
| L | O | C | K | E | T | | H | U | P | U | R | E |
| S | A | L | I | T | T | | E | V | I | N | T | B |

20) Word Division

(500 points)

This is a long-division problem in which letters are substituted for numbers. Solve the problem by determining the number value for each letter, then write the letter on the blank above the number it represents. When the letters have been arranged in order from 0 to 9, they will spell out two five-letter words.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| D | I | N | E | | U | T | O | P | I | N | N |
| | | | | | D | I | N | E | | | |
| | | | | | I | E | P | N | I | | |
| | | | | | I | D | O | I | I | | |
| | | | | | | I | U | A | P | A | |
| | | | | | | I | D | O | I | I | |
| | | | | | | | E | S | I | | |

2017 LOGIC PRACTICE TEST #1 MASTER ANSWER SHEET

1) Sudoku (800 points)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 5 | | | 2 | 6 |
| | 9 | | 3 | | | 1 | 4 | |
| 2 | | 1 | | | 7 | | | |
| 3 | 5 | | | | | 9 | | 2 |
| 6 | 1 | 4 | 9 | | 5 | | 8 | |
| | | 9 | | | | | | |
| | | | | | | | | |
| 1 | 3 | 5 | | 7 | | | | 9 |
| | 6 | | | | | 5 | 3 | 8 |

DECATHLETES:
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2) Hungry Bugs (200 points)

Answer: _____

3) Add a Word (250 points - 50 points each)

- A) _____
- B) _____
- C) _____
- D) _____
- E) _____

_____ x 50 =



4) Balancing Act (300 points - 100 points each)

Answer: A = _____
 B = _____
 C = _____

5) Cross Math (400 points)

| | | | | | | | | |
|----|---|----|---|----|---|----|---|----|
| 8 | X | 2 | - | 3 | + | 9 | = | 22 |
| ÷ | | + | | X | | ÷ | | |
| 2 | + | 8 | X | 9 | - | 3 | = | 71 |
| + | | X | | + | | + | | |
| 9 | ÷ | 3 | - | 2 | + | 8 | = | 9 |
| - | | - | | - | | x | | |
| 3 | + | 9 | X | 8 | - | 2 | = | 73 |
| = | | = | | = | | = | | |
| 10 | | 17 | | 21 | | 19 | | |

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_____ x 100 =



6) Add a Letter (350 points - 50 points each)

- A) _____
- B) _____
- C) _____
- D) _____
- E) _____
- F) _____

Word: _____

7) Word Dial (500 points - 100 points each)

Words:

- A) _____
- B) _____
- C) _____
- D) _____

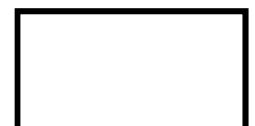
Person:

- A) _____

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_____ x 50 =

_____ x 100 =



8) Find the Vowels (500 points)

Write the quote in the space below:

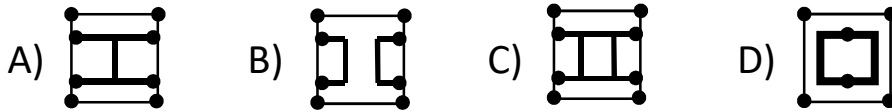
DECATHLETES:
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Patterns

(450 points - 150 points each)

DECATHLETES:
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9) Circle the answer:



_____ x 150

= _____

10) What should replace the (?)? _____

11) Circle the answer:

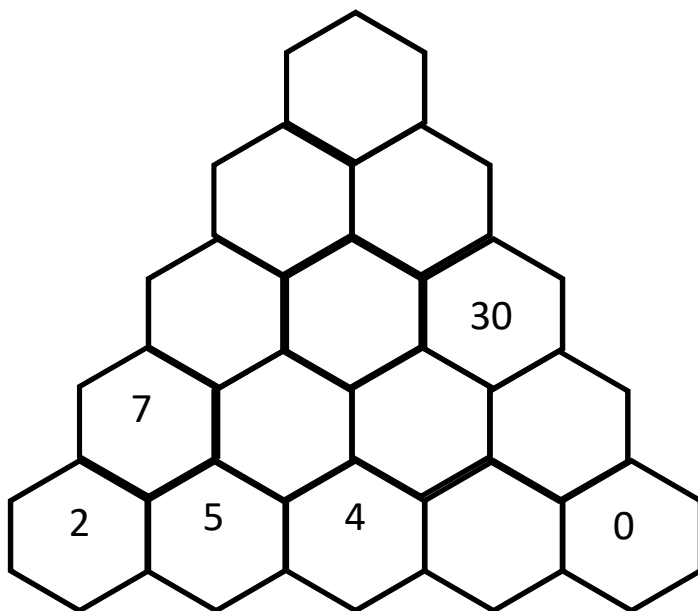
- A) 124968
- B) 142986
- C) 124986
- D) 129486
- E) 214986



12) Favorite Foods (500 points - 100 points each)

- A) How many students buy all three food items? _____
- B) How many students buy oranges and popsicles but no chocolate milk? _____
- C) How many students buy oranges and chocolate milk but no popsicles? _____
- D) How many students purchase food items from the cafeteria? _____
- E) How many students have popsicles only? _____

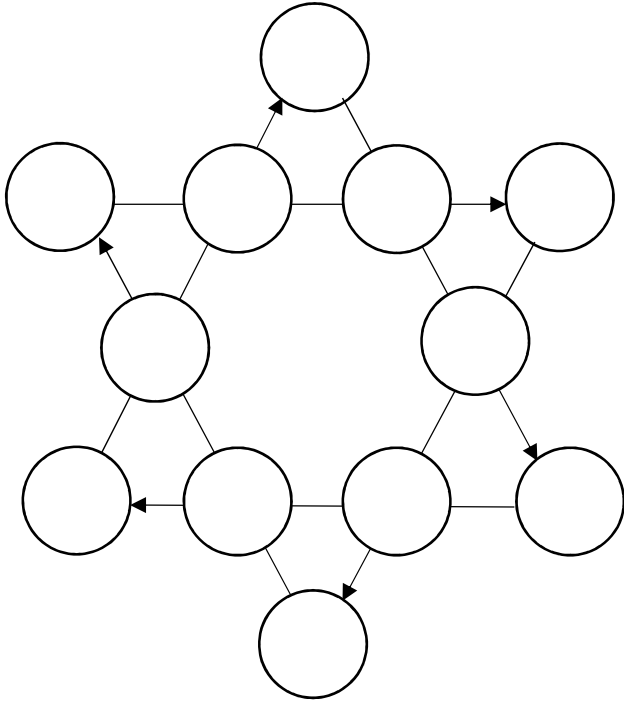
13) The Beehive (200 points)



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_____ x 100 =

14) Word Star (600 points - 50 points each)



15) Circle Around (450 points - 50 points each)

- A) _____
- B) _____
- C) _____
- D) _____
- E) _____
- F) _____
- G) _____
- H) _____
- I) _____

DECATHLETES:
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USE ONLY.

_____ x 50 =

_____ x 50 =



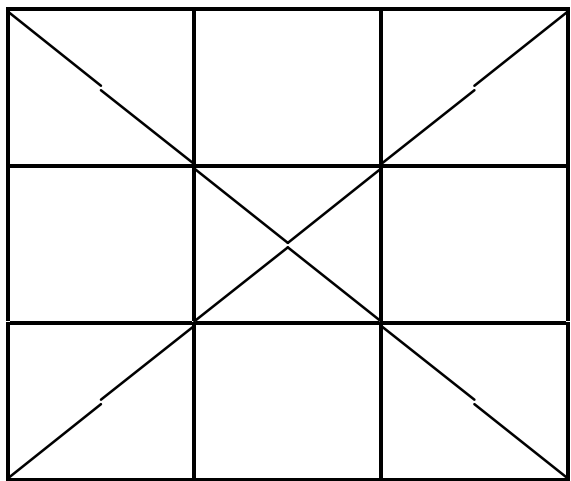
16) Logic -Restaurant Review (750 points - 50 points each)

| Student | Restaurant | Day of Week | Stars |
|----------|------------|-------------|-------|
| Angela | | | |
| Betsy | | | |
| Courtney | | | |
| David | | | |
| Taylor | | | |

DECATHLETES:
DO NOT WRITE
IN THIS AREA:
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_____ x50 =

17) Triangle Sums (450 points)



18) Riddle Time (300 points)

What am I? _____

2017 LOGIC PRACTICE TEST #1 MASTER ANSWER SHEET

19) From A to Z
(500 points -
20 points each)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | E | A | U | T | I | F | U | L | N | A | E | T |
| E | P | I | P | L | A | | T | I | C | E | M | N |
| R | E | A | R | H | U | | A | R | B | H | B | O |
| P | E | N | T | R | E | | U | A | L | I | T | Y |
| M | A | N | P | R | O | | I | B | I | T | E | S |
| E | X | C | H | A | R | | O | T | L | E | N | E |
| D | E | R | A | N | N | | R | T | U | R | E | M |
| C | A | N | D | S | H | | I | R | L | O | O | M |
| S | C | O | N | V | E | | S | I | O | N | E | D |
| E | S | S | P | O | N | | E | C | L | A | S | S |
| I | S | S | I | S | E | | T | E | N | C | E | L |
| B | R | E | S | A | D | | O | U | R | N | E | Y |
| P | E | S | C | O | R | | I | O | N | T | H | Y |
| N | A | S | A | L | A | | E | N | D | E | R | C |
| I | D | E | P | L | O | | G | H | S | T | E | R |
| C | A | N | D | A | P | | O | N | T | U | R | D |
| M | I | T | E | M | I | | E | S | C | O | R | P |
| T | R | E | T | R | E | | O | U | R | N | E | N |
| G | U | A | L | L | A | | A | R | D | S | T | E |
| G | A | L | L | O | P | | T | A | T | O | N | S |
| B | I | D | S | O | C | | E | T | H | Y | L | Y |
| T | H | R | O | S | E | | A | N | I | L | L | Y |
| Y | A | R | J | A | R | | D | I | S | H | O | N |
| X | S | E | C | R | E | | A | R | Y | A | R | D |
| L | O | C | K | E | T | | H | U | P | U | R | E |
| S | A | L | I | T | T | | E | V | I | N | T | B |

DECATHLETES:
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_____ x 20 =



2017 LOGIC PRACTICE TEST #1 MASTER ANSWER SHEET

20) Word Division

(500 points)

Answer:

0 1 2 3 4 / 5 6 7 8 9

DECATHLETES:
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Logic Total Score: _____

2017 LOGIC PRACTICE TEST #2

1) Diagonal Sudoku (550 points - 10 points each)

To complete the puzzle below, fill in each row, column, diagonal (denoted by the shaded boxes), and 3 by 3 square with the digits 1 through 9. Each digit may only be used once in each row, column, diagonal and 3 by 3 square.

| | | | | | | | | |
|---|---|---|---|--|---|---|---|---|
| | | 6 | | | | 1 | 8 | |
| | | | 4 | | | 3 | | |
| | | 1 | 3 | | 2 | | 6 | |
| 9 | | | | | 7 | | 4 | 3 |
| | | | | | | | | |
| 8 | 7 | | 9 | | | | | 2 |
| | 5 | | 2 | | 3 | 9 | | |
| | | 2 | 1 | | 5 | | | |
| | 4 | | | | | 2 | | |

2) Zig Zag Word Ladder

(300 points)

Look at the clue to solve #1. The second part of the answer to #1 is the first part of the answer to #2. Continue in the same method to solve the remaining word combinations.

Here is an example of a Zig Zag Word Ladder:

1. Begin to eat
2. A place for mail

1. dig _____ in _____
2. _____ in box _____

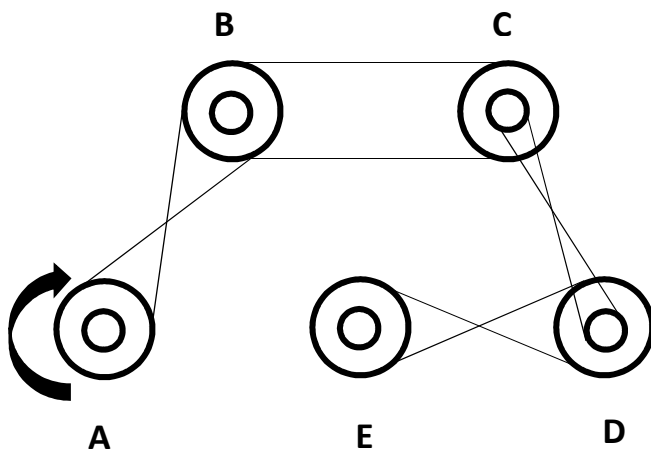
- Clues:
1. A naval officer's diary
 2. Honest Abe's first home
 3. A feeling of being trapped inside
 4. At a frenzied pace
 5. Farm implement

1. _____
2. _____
3. _____
4. _____
5. _____

3) Push Me, Pull You

(200 points)

Each pulley has two wheels that turn together in the same direction. The diameter of the smaller wheel is 1 inch. The diameter of the larger wheel is 2 inches. If wheel A revolves at a speed of 20 mph in a clockwise direction, how fast does wheel E revolve and in which direction?



Speed: _____

Direction: _____

4) Snow Day

(600 points - 100 points each)

School was closed on Monday after a winter storm dropped a foot of new snow. During their day off, the students from St. Paul Junior High School met in a park to play in the new snow. To ward off the cold, the children wore hats, scarves, and mittens. The same number of children wore a hat only as wore a scarf and mittens only. There were only four children who did not wear a hat. Five children wore a hat and a scarf, but no mittens. Twice as many children wore a hat only as a scarf only. Eight children did not wear mittens and seven did not wear a scarf. One more child wore a hat, mittens, and a scarf than the number of children who wore a hat only.

How many children wore a hat, a scarf, and mittens? _____

How many children wore mittens only? _____

How many children wore a scarf only? _____

How many children wore a hat and mittens, but no scarf? _____

How many children wore mittens? _____

How many children played in the snow at the park? _____

2017 LOGIC PRACTICE TEST #2

5) Find the Vowels (320 points)

The vowels and spaces between words have been omitted from this quote. Can you replace the vowels and divide the letters into words to find the hidden quote?

THLTMTMSRFMNSNTWHRHSTNDSNMMNTSFCMFRTNDCNVNCE,

BTWHRHSTNDSTTMSFCHLLNGNDCNTRVRSY.

-MRTNLTHRKNJGJR

6) Word Shuffle (320 points - 40 points each)

Two related words with their letters in the correct order are combined in each row of letters. To solve the puzzle, separate the letters into the two words. There are no extra letters, and no letter is used more than once. The number after each blank indicate the number of letters in each word.

(A) SUSTABWATIOYN _____ (6) _____ (7)

(B) TASEALERNTCH _____ (6) _____ (6)

(C) FLSPOWREINGRS _____ (6) _____ (7)

(D) SCOUTUDENNTCIL _____ (7) _____ (7)

7) Crypto-Characters (500 points)

Crypto-characters are substitution codes. Each symbol in the crypto-character stands for a letter in the alphabet. No symbol represents more than one letter. Commas and periods are used as punctuation and do not represent letters. Substitute the letter each symbol represents into the crypto-character puzzle to find the hidden quote.

✕ ●□❖ℳ ◆≡□♦ℳ ☒≡□ ℳ☐■ ♦○✕●ℳ ✕■
◆◊□☞☒●ℳ, ☒≡□ ℳ☐■ ን☐◆≡ℳ◊ ◊◆◊ℳ■ን◆≡≡
✕◊□○ ሁ✕◆◆◊ℳ♦♦, ☐■ሁ ን◊◊□☒ ☒◊☐❖ℳ ☒□
◊ℳ✕●ℳℳ◆✕□■. ✕◆ ✕♦ ◆≡ℳ ☒☞♦✕■ℳ♦♦ □✕
♦○☐●● ○✕■ሁ◆ ◆□ ♦≡◊✕■&. ☒☞◆ ◆≡ℳ□☒ ☒≡□♦ℳ
≡ℳ☐◊♦ ☐◊ℳ ✕✕◊○, ☐■ሁ ☒≡□♦ℳ ℳ□■♦ℳ✕ℳ■ℳℳ
☐◊◊◊□❖ℳ♦ ◆≡ℳℳ✕◊ ℳ□■ሁ☞ℳ◆, ☒✕●● ◊☞◊♦◊ℳ
◆≡ℳℳ✕◊ ◊◊✕■ℳ✕◊●ℳ♦ ☞■◆□ ሁℳ☐◆≡≡.
●ℳ□■☐ሁ□ ሁ☐ ❖✕■ℳ✕

2017 LOGIC PRACTICE TEST #2

8) KenKen

(810 points - 10 points each)

In this KenKen puzzle, the digits 1 through 9 appear exactly once in each row and column. Within the puzzle, the grid is divided into different shapes, shown by heavy outlines. Within each heavily outlined shape, use the indicated math operator (addition, subtraction, multiplication, or division) to reach the solution indicated next to the math operator.

| | | | | | | | | |
|------|------|------|------|------|------|------|-----|------|
| 30 x | 9 + | | 42 x | | 5 + | | 1 - | 4 ÷ |
| | 5 + | | 22 + | 20 x | | 36 x | | |
| 14 x | 6 + | | | 3 ÷ | 10 + | | 4 ÷ | |
| | | 8 + | 7 - | | | 84 x | 1 - | 18 x |
| 8 x | 13 + | | | 54 x | | | | |
| | | 19 + | 11 + | | 4 ÷ | | 4 - | |
| 2 - | | | | 3 - | | 15 + | | 18 x |
| 1 - | | 3 - | | | 1 - | 4 - | | |
| 2 - | | 24 x | | | | 30 x | | |

9) Domino Dilemma

(300 points)

Each domino tile is divided into two halves, marked with a number of dots ranging from 0 to 6. To play dominoes, place each domino on the board so that each half of the domino matches the number of dots on the halves of the dominoes immediately adjacent to it. For example, if the first tile is a pair of 4s, only a domino that has one half marked with 4 dots may be played next to it. Dominoes with pairs, for example a pair of 6s, are placed perpendicular to adjacent tiles. Zeros are represented by ☉.

Use the numerals, from 0 to 6, to fill in each half of the blank domino tiles. Dominoes may not be used more than once. A chart showing a complete set of dominoes has been provided to help you.

The puzzle consists of two main parts. On the left is a 6x5 grid of dominoes with various dot patterns. On the right is a large T-shaped structure made of dominoes. The structure consists of a horizontal row of 10 dominoes and a vertical column of 10 dominoes meeting at the 5th domino from the left. Some faces are pre-filled with dots or smiley faces, while others are blank.

10) Synonym Sequence

(500 points)

Seven synonyms of the keyword are listed. Take one letter from each of the synonyms in order to spell out an eighth synonym of the keyword.

Keyword: knowledge

wisdom

information

awareness

skill

cognition

theory

instruction

Synonym: _____

11) So Many Combinations!

(480 points)

Complete the grid with zeros and ones until there are five zeros and five ones in every row and every column. No more than two of the same number may be next to each other. Rows or columns with the same pattern of zeros and ones are not allowed.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | 1 | | | | 0 | |
| 1 | | 1 | | | 1 | 1 | | | 1 |
| | | | 1 | | | | 1 | | 0 |
| | 0 | | 1 | | | | | 0 | 0 |
| | | | | | 1 | 1 | | | |
| | 0 | 0 | | | 0 | | 1 | 1 | |
| | | | | | | | | | |
| | 0 | 0 | | | | | 1 | | 1 |
| 1 | 0 | 0 | | | | 0 | | | |
| | | | | | | | 1 | 1 | |

12) Logic Fallacies

(200 points - 100 points each)

Read the following passages. Each passage contains an example of a logic fallacy.

Identify the name of the common logic fallacy that best describes the passage.

Write the name of the fallacy on the line following each passage.

A) Excerpt from the “2014 State of the Union Address”: “A pre-existing condition used to mean that someone like Amanda Shelley, a physician assistant and single mom from Arizona, couldn’t get health insurance. But on January 1st, she got covered. On January 3rd, she felt a sharp pain. On January 6th, she had emergency surgery. Just one week earlier, Amanda said, that surgery would’ve meant bankruptcy. That’s what health insurance reform is all about - the peace of mind that if misfortune strikes, you don’t have to lose everything.”

What is the logic fallacy in this statement? _____

B) Our book club has selected *A Tale of Two Teenagers* to read. The book must be well-written. It’s been on the *New York Times* best-seller list for six weeks.

What is the logic fallacy in this statement? _____

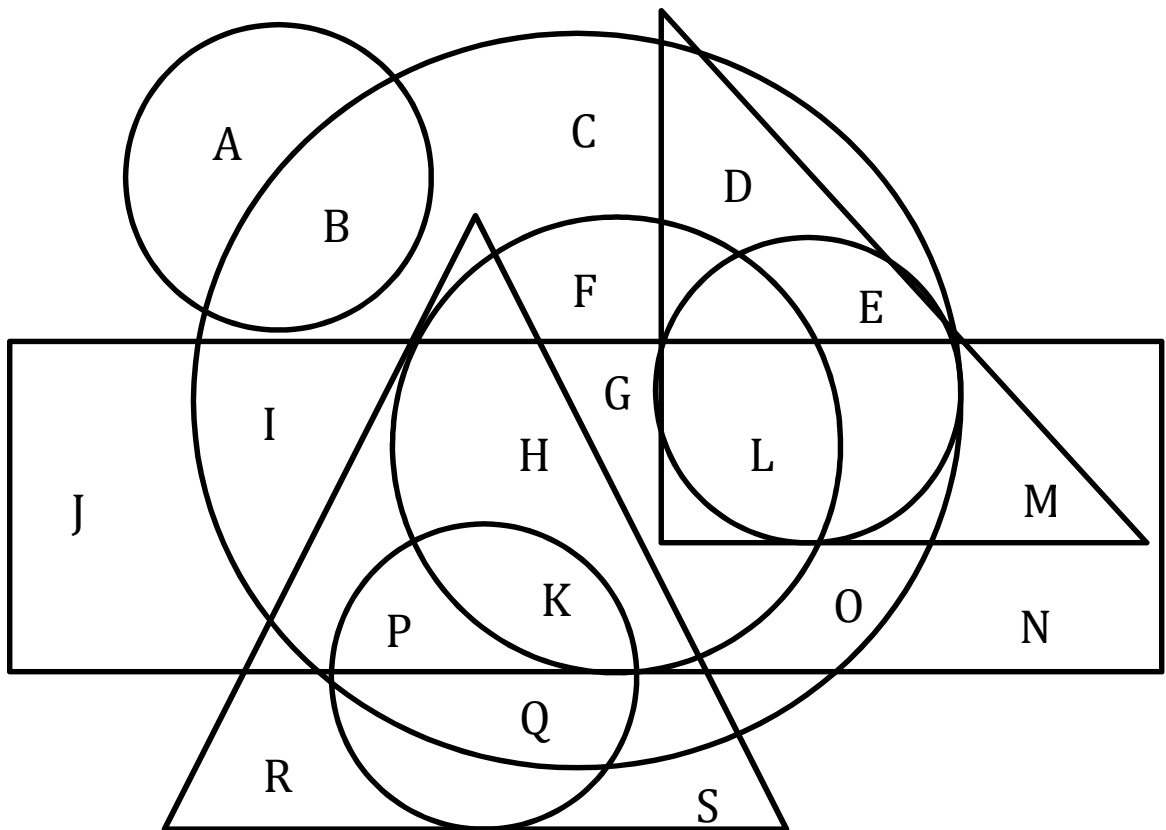
13) Shape Sorter

(350 points - 50 points each)

Considering only rectangles, triangles and circles, which letters are in:

Example: A triangle, but not a rectangle? D, E, Q, R, S

- A) A rectangle but not a circle? _____
- B) A circle but not a triangle? _____
- C) A triangle and a circle, but not a rectangle? _____
- D) A triangle, a circle and a rectangle? _____
- E) Two circles? _____
- F) Two triangles? _____
- G) A rectangle and a triangle, but not a circle? _____



2017 LOGIC PRACTICE TEST #2

14) Kakuro

(590 points - 5 points each)

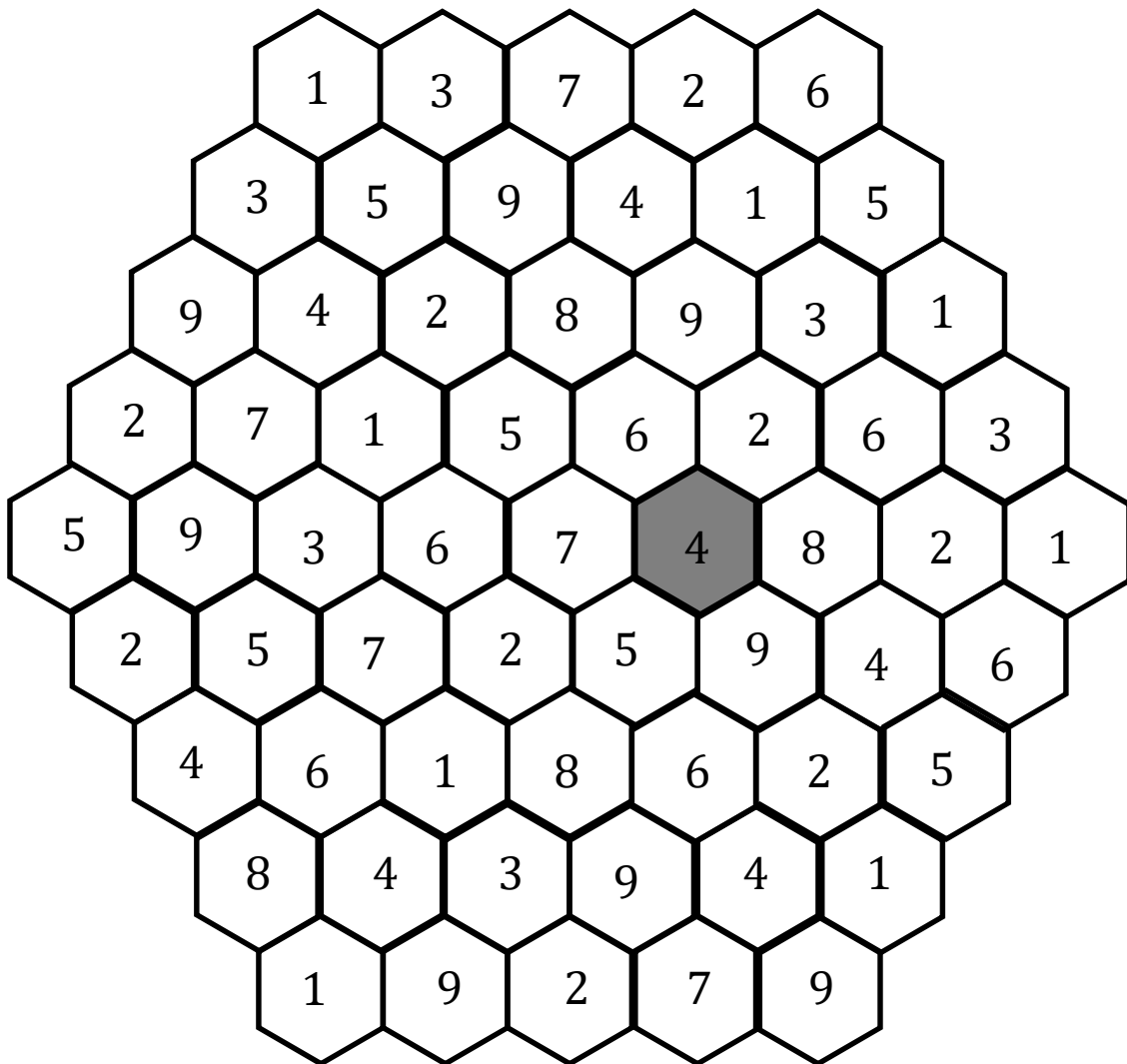
Each row or column must add up to the number provided above it or to the left. Numbers above the diagonals are sums of rows. Numbers below the diagonals are sums of columns. There are no zeros, and you may only use each digit 1 – 9 once in any given sum.

| | | | | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|----------|----|----|
| | | | 10 | 3 | 15 | 30 | | 14 | 26 | | | 37 | 11 |
| | | 13 6 | | | | | 15 12 | | | 15 | 14 | | |
| | 45 15 | | | | | | | | | | 10 | | |
| 12 | | | | 11 39 | | | | 16 10 | | | 3 | | |
| 8 | | | 21 13 | | | | 11 7 | | | 15 | | | |
| | | 20 | | | | 11 18 | | | 4 | 9 27 | | | 12 |
| | 12 12 | 12 34 | | | 6 17 | | | 10 11 | | | 12 | | |
| 16 | | | 20 | | | | 7 15 | | | | 14 11 | | |
| 13 | | | 26 17 | | | | | | 16 | | | | |
| | 14 20 | | | | 14 22 | | | 22 | 12 18 | | | 17 | 8 |
| 14 | | | | 15 11 | | | 6 12 | | | | 9 | | |
| 3 | | | 16 | | | 6 14 | | | | 8 | 15 4 | | |
| 12 | | | 45 | | | | | | | | | | |
| 16 | | | | 11 | | | 20 | | | | | | |

15) Stop Signs

(330 points - 30 points each)

One of the hexagons has been shaded in grey because it and the six surrounding hexagons all contain different numbers. There are 11 additional hexagons like this. Can you find them all?

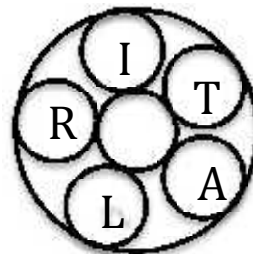
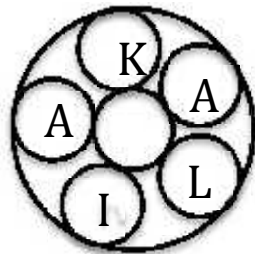
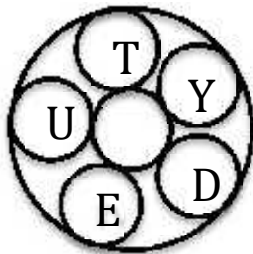
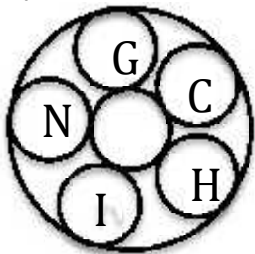


16) Word Dial

(350 points - 35 points each)

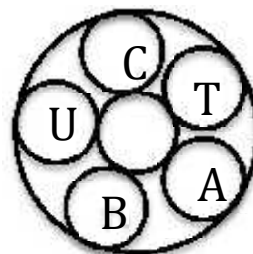
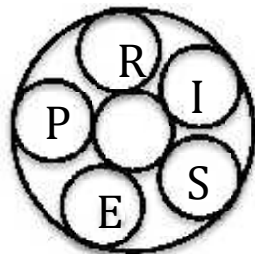
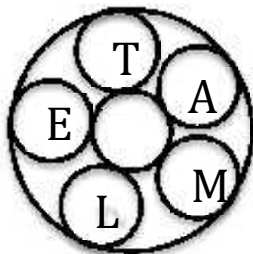
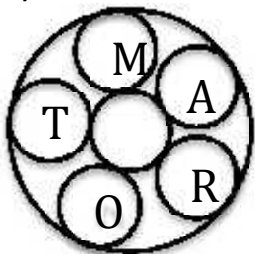
Each Word Dial below contains a word with one letter missing. When you determine the missing letter, enter it into the center of the dial. You will be able to spell a word in a clockwise direction. The letters in the center of the dials form an anagram of the name of someone important in the Catholic Church. Write the name of the person on the line below the words.

A)



Person: _____

B)



Person: _____

17) Travel Time

(200 points)

As an airline pilot, Samantha traveled all over the world.

Some destinations she hated and some she liked.

She hated Warsaw.

She loved Tokyo.

She hated Denmark.

She loved Prague.

She hated Finland.

She loved Israel.

Based on the information of Samantha's preferences, which of the following destinations did Samantha hate?

A) Madrid

B) Ecuador

C) Seoul

D) Lebanon

18) Riddle Time

(200 points)

What word is indicated by the clues listed below? _____

The bottom of the ninth,

The beginning of the end,

The first of all,

The center of seven,

The end of the line,

The start of nothing.

19) Let's Go to the Movies

(750 points - 50 points each)

Last Saturday, two men (one is Taylor) and three women (one is Chris) went to the local theater, each to see a different film. Determine the order in which the moviegoers stood in line to purchase their tickets, the movie each viewed, and the food each bought at the snack bar.

1. Jenny was in line for tickets just ahead of the man who saw the action movie, who was just ahead of the person who purchased a soda at the snack bar. The woman who saw the comedy movie was in line just ahead of the woman who saw the western.
2. David was just ahead of the woman who saw the comedy. Taylor stood in line for tickets somewhere in front of the person who saw the musical. Neither of the men who went to the movies bought popcorn.
3. Chris was neither the last person to purchase a movie ticket nor the person who purchased ice cream. Annie ate a candy bar during the movie. Taylor did not buy nachos. The person who saw the comedy movie purchased nachos at the snack bar.

2017 LOGIC PRACTICE TEST #2

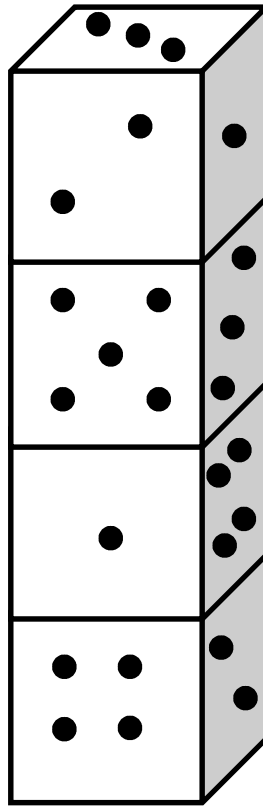
| | | Order in Ticket Line | | | | | Type of Movie | | | | | Snack | | | | |
|---------------|-------------|----------------------|-----|-----|-----|-----|---------------|--------|-------------|---------|---------|-------|-----------|--------|---------|------|
| | | 1st | 2nd | 3rd | 4th | 5th | Action | Comedy | Documentary | Musical | Western | Candy | Ice Cream | Nachos | Popcorn | Soda |
| Movie Fan | Annie | | | | | | | | | | | | | | | |
| | Chris | | | | | | | | | | | | | | | |
| | David | | | | | | | | | | | | | | | |
| | Jenny | | | | | | | | | | | | | | | |
| | Taylor | | | | | | | | | | | | | | | |
| Snack | Candy | | | | | | | | | | | | | | | |
| | Ice Cream | | | | | | | | | | | | | | | |
| | Nachos | | | | | | | | | | | | | | | |
| | Popcorn | | | | | | | | | | | | | | | |
| | Soda | | | | | | | | | | | | | | | |
| Type of Movie | Action | | | | | | | | | | | | | | | |
| | Comedy | | | | | | | | | | | | | | | |
| | Documentary | | | | | | | | | | | | | | | |
| | Musical | | | | | | | | | | | | | | | |
| | Western | | | | | | | | | | | | | | | |

| Movie Fan | Order in Ticket Line | Type of Movie | Snack |
|-----------|----------------------|---------------|-------|
| Annie | | | |
| Chris | | | |
| David | | | |
| Jenny | | | |
| Taylor | | | |

20) Two Die Four

(150 points)

What is the sum of all the numbers on the unseen sides of the four dice?



2017 Logic Practice Test #2 Team Answer Sheet

1) Diagonal Sudoku

(550 points - 10 points each)

| | | | | | | | | |
|---|---|---|---|--|---|---|---|---|
| | | 6 | | | | 1 | 8 | |
| | | | 4 | | | 3 | | |
| | | 1 | 3 | | 2 | | 6 | |
| 9 | | | | | 7 | | 4 | 3 |
| | | | | | | | | |
| 8 | 7 | | 9 | | | | | 2 |
| | 5 | | 2 | | 3 | 9 | | |
| | | 2 | 1 | | 5 | | | |
| | 4 | | | | | 2 | | |

DECATHLETES:
DO NOT WRITE
IN THIS AREA:
FOR SCORING
USE ONLY.

_____ x 10 =

2) Zig Zag Word Ladder

(300 points)

1. _____
2. _____
3. _____
4. _____
5. _____

3) Push Me, Pull You

(200 points)

Speed: _____

Direction: _____



4) Snow Day (600 points - 100 points each)

How many children wore a hat, a scarf, and mittens? _____

How many children wore mittens only? _____

How many children wore a scarf only? _____

How many children wore a hat and mittens, but no scarf? _____

How many children wore mittens? _____

How many children played in the snow at the park? _____

5) Find the Vowels (320 points)

Write the quote.

DECATHLETES:
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USE ONLY.

_____ x 100 =



6) Word Shuffle

(320 points - 40 points each)

- A) _____
- B) _____
- C) _____
- D) _____

7) Crypto-Characters

(500 points)

DECATHLETES:
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USE ONLY.

_____ x 40 =



2017 Logic Practice Test #2 Team Answer Sheet

8) KenKen

(810 points - 10 points each)

| | | | | | | | | |
|------|------|------|------|------|------|------|-----|------|
| 30 x | 9 + | | 42 x | | 5 + | | 1 - | 4 ÷ |
| | 5 + | | 22 + | 20 x | | 36 x | | |
| 14 x | 6 + | | | 3 ÷ | 10 + | | 4 ÷ | |
| | | 8 + | 7 - | | | 84 x | 1 - | 18 x |
| 8 x | 13 + | | | 54 x | | | | |
| | | 19 + | 11 + | | 4 ÷ | | 4 - | |
| 2 - | | | | 3 - | | 15 + | | 18 x |
| 1 - | | 3 - | | | 1 - | 4 - | | |
| 2 - | | 24 x | | | | 30 x | | |

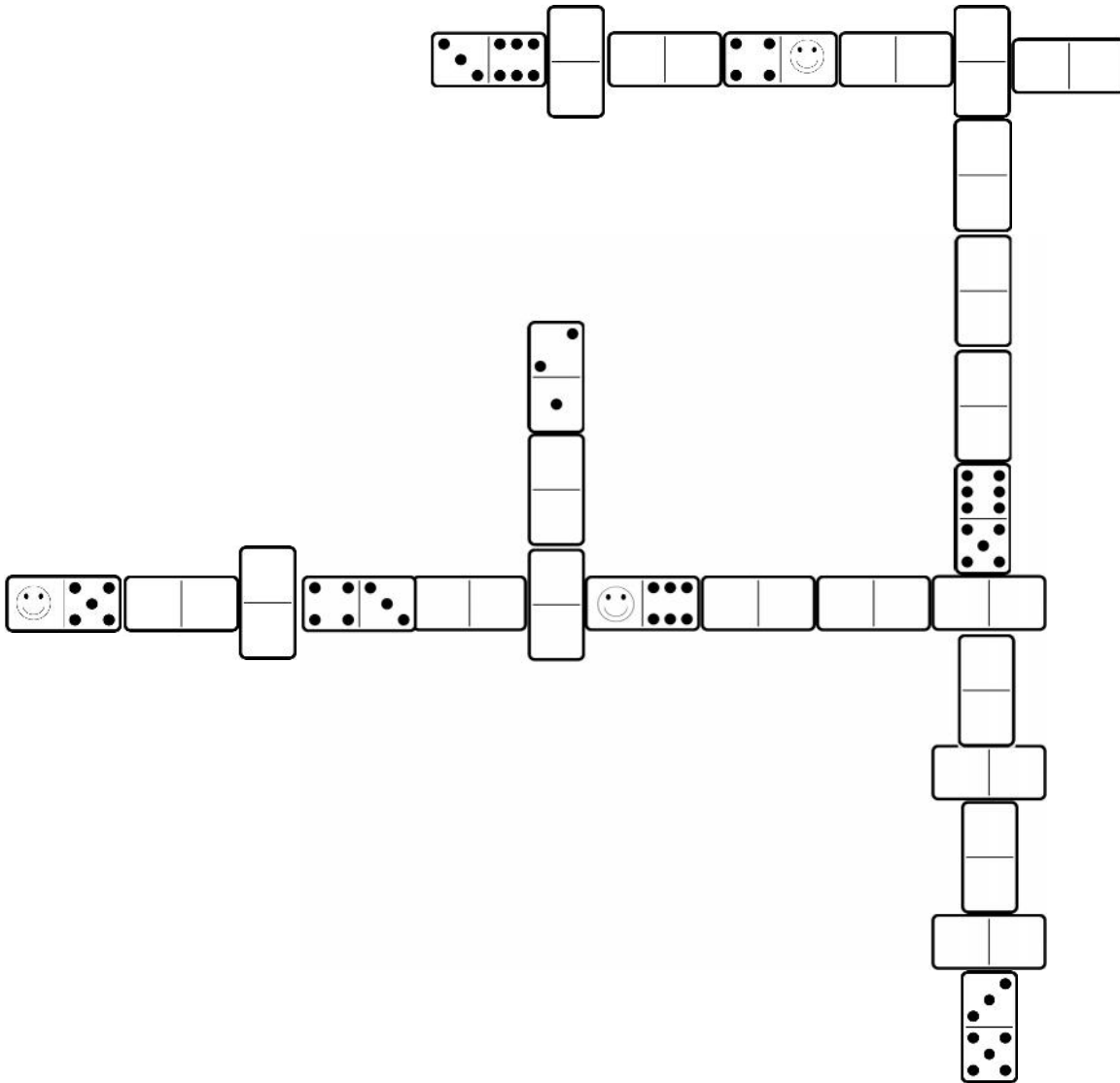
DECATHLETES:
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IN THIS AREA:
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USE ONLY.

_____ x 10 =



9) Domino Dilemma

(300 points)



DECATHLETES:
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USE ONLY.



2017 Logic Practice Test #2 Team Answer Sheet

10) Synonym Sequence (500 points)

Synonym: _____

11) So Many Combinations! (480 points)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | 1 | | | | 0 | |
| 1 | | 1 | | | 1 | 1 | | | 1 |
| | | | 1 | | | | 1 | | 0 |
| | 0 | | 1 | | | | | 0 | 0 |
| | | | | | 1 | 1 | | | |
| | 0 | 0 | | | 0 | | 1 | 1 | |
| | | | | | | | | | |
| | 0 | 0 | | | | | 1 | | 1 |
| 1 | 0 | 0 | | | | 0 | | | |
| | | | | | | | 1 | 1 | |

DECATHLETES:
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FOR SCORING
USE ONLY.



DECATHLETES:
DO NOT WRITE
IN THIS AREA:
FOR SCORING
USE ONLY.

12) Logic Fallacies (200 points - 100 points each)

A) _____

B) _____

_____ x 100 =

13) Shape Sorter (350 points - 50 points each)

A) A rectangle but not a circle? _____

B) A circle but not a triangle? _____

C) A triangle and a circle, but not a rectangle? _____

D) A triangle, a circle and a rectangle? _____

E) Two circles? _____

F) Two triangles? _____

G) A rectangle and a triangle, but not a circle? _____

_____ x 50 =



2017 Logic Practice Test #2 Team Answer Sheet

14) Kakuro

(590 points - 5 points each)

| | | | | | | | | | | | | | |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|----------|---------|----|
| | | | 10 | 3 | 15 | 30 | | 14 | 26 | | | 37 | 11 |
| | | 13 6 | | | | | 15 12 | | | 15 | 14 | | |
| | 45 15 | | | | | | | | | | | 10 | |
| 12 | | | | 11 39 | | | | 16 10 | | | | 3 17 | |
| 8 | | | 21 13 | | | | 11 7 | | | 15 | | | |
| | | 20 | | | | 11 18 | | | 4 | 9 27 | | | 12 |
| | 12 | 12 34 | | | 6 17 | | | 10 11 | | | 12 | | |
| 16 | | | 20 | | | | 7 15 | | | | 14 11 | | |
| 13 | | | 26 17 | | | | | | 16 | | | | |
| | 14 20 | | | | 14 22 | | | 22 | 12 18 | | | 17 | 8 |
| 14 | | | | 15 11 | | | 6 12 | | | | 9 | | |
| 3 | | | 16 | | | 6 14 | | | | 8 | 15 4 | | |
| 12 | | | 45 | | | | | | | | | | |
| 16 | | | | 11 | | | 20 | | | | | | |

DECATHLETES:
DO NOT WRITE
IN THIS AREA:
FOR SCORING
USE ONLY.

_____ x 5 =

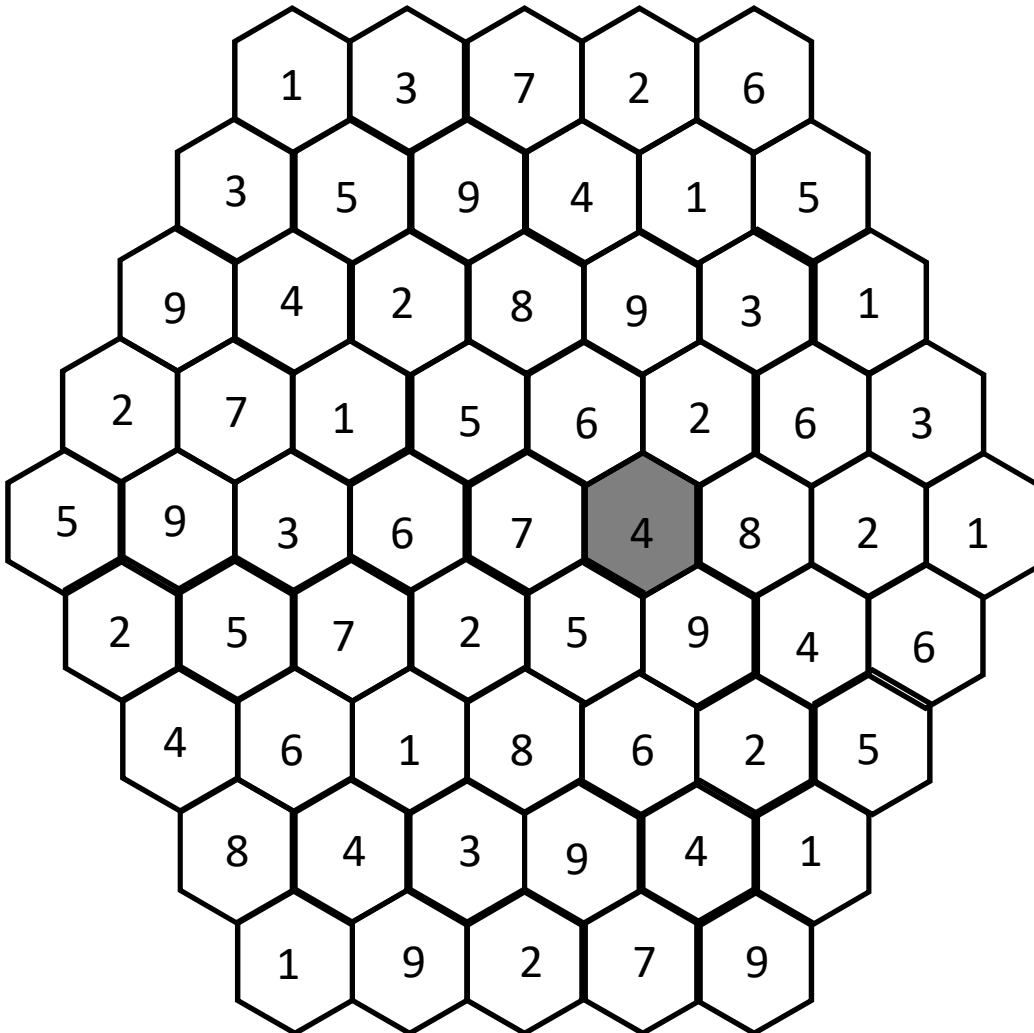


DECATHLETES:
DO NOT WRITE
IN THIS AREA:
FOR SCORING
USE ONLY.

15) Stop Signs

(330 points - 30 points each)

Shade in the 11 hexagons.



_____ x 30 =



2017 Logic Practice Test #2 Team Answer Sheet

16) Word Dial (350 points - 35 points each)

A) _____

Person: _____

B) _____

Person: _____

17) Travel Time (200 points)

Circle the answer.

- A) Madrid B) Ecuador C) Seoul D) Lebanon

18) Riddle Time (200 points)

What word is indicated by the clues? _____

DECATHLETES:
DO NOT WRITE
IN THIS AREA:
FOR SCORING
USE ONLY.

_____ x 35 =



2017 Logic Practice Test #2 Team Answer Sheet

19) Let's Go to the Movies (750 points - 50 points each)

Fill in the table with the answers.

DECATHLETES:
DO NOT WRITE
IN THIS AREA:
FOR SCORING
USE ONLY.

_____ x 50 =

| Movie Fan | Order in Ticket Line | Type of Movie | Snack |
|-----------|----------------------|---------------|-------|
| Annie | | | |
| Chris | | | |
| David | | | |
| Jenny | | | |
| Taylor | | | |

20) Two Die Four (150 points)

What is the sum of all the numbers on the unseen sides of the four dice? _____

Logic Total Score: _____