ALBERTA DISTANCE LEARNING CENTRE

Mathematics 10-3

MAT1793

Puzzles and Games Assignment

Student's Questions and Comments

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Summary

	Marks Earned	Total Possible Marks	Percent
Introduction		19	

Teacher's Comments:

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Math 10-3 Introduction

Value
19

Lesson Assignment

Use strategic thinking to play the games below and answer the questions that follow.

1. Magic Square Puzzles. Arrange the numbers 1 to 9 in the magic square below so that each horizontal, vertical, and diagonal line adds to 15. You may only use each number once.

(2) a. Complete the puzzle below by filling in the blanks. The puzzle on the right side is a magic square.

12	54	24	÷		=		9	
42						7	5	
	6	48				6		

(3) b. Arrange the numbers 1 to 9 in the magic square below so that each horizontal, vertical, and diagonal line adds to 15. You many only use each number once.

	5	
4		2

2. Number Patterns

(2) a. The diagram below shows the first three steps of a pattern.

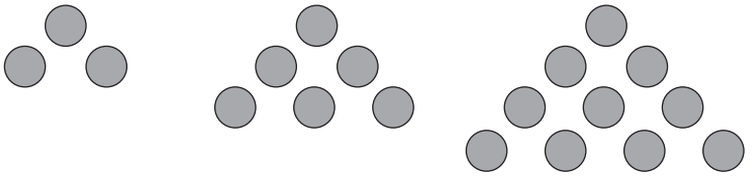


Diagram 1 Diagram 2 Diagram 3

Follow the pattern to find the number of circles in each diagram. Describe the pattern.

Diagram Number	Number of Circles
1	
2	
3	
4	
5	
6	

Pattern:

(3) b. Develop a number pattern problem question similar to the one above. Draw the first three figures as part of your problem.

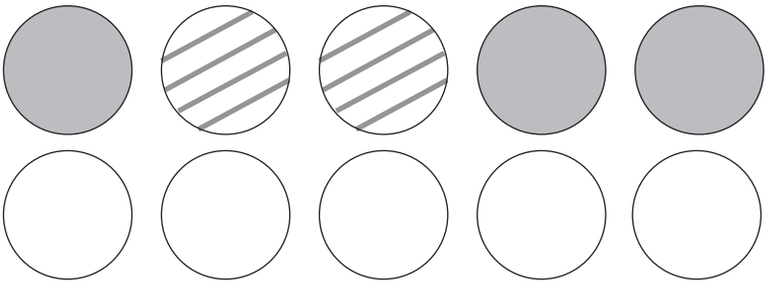
i. Draw the solution for the next three figures in the pattern.

ii. Describe the pattern.

Pattern:

3. Logic and Strategy Game

In a two player strategy game, players take turns shading one or two circles on a board. The goal of the game is to shade the last of the ten circles on the board. In the game below, Player A is shading in a solid colour, and Player B is shading with lines.



(1) a. It's now Player B's turn. How many circles should Player B shade to guarantee a win?

(2) b. Explain why this move will guarantee a win. Use a diagram if necessary.

(6) 4. Logic Puzzles. **Complete either Part A or Part B.**

I will be doing Part _____.

a. Every Suduko has a solution that can be found logically. Enter numbers into the blank spaces so that each row, column, and 3 × 3 box contains the numbers 1 to 9.

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

What was your first move in solving this puzzle? Why did you choose this as your first move?

b. The following is a logic puzzle that provides a series of clues that are linked together to solve a given problem. There is only one possible solution.

Fill in the chart below by drawing a circle to represent that a pair of information is true. Then eliminate the pairs of information that are not true with an ***X***.
Below is an example of a basic logic puzzle and how to solve it.

There are four people who developed videos. The video developers are Louis, Naomi, Rachel, and Zandro. They each created one video. The videos that were created are *Kittens*, *Babies*, *Giraffes* and *Hamsters*.

Use the following clues to determine who developed the video *Giraffes* and the number of times it has been viewed.

Clue 1:

Naomi's video is *Giraffes*.

*Working in the bottom section of the chart, only Naomi has a video called Giraffes. Draw a circle in the intersection of Giraffes and Naomi. Place an **X** in remaining parts of the row Giraffes and in the remaining parts of the column under Naomi's name.*

		Authors				Titles			
		Louis	Naomi	Rachel	Zandro	Kittens	Babies	Giraffes	Hamsters
Views	3 million								
	4 million								
	5 million								
	6 million								
Titles	Kittens		X						
	Babies		X						
	Girrafes	X	O	X	X				
	Hamsters		X						

Clue 2:

The person whose video was *Giraffes* had 5 million views.

*Using the section of the chart on the right, draw a circle in the intersection of Giraffes and 5 million views. Place an **X** in the remaining parts of the row million and in the remaining parts of the column under Giraffes.*

		Authors				Titles			
		Louis	Naomi	Rachel	Zandro	Kittens	Babies	Giraffes	Hamsters
Views	3 million							X	
	4 million							X	
	5 million					X	X	O	X
	6 million							X	
Titles	Kittens		X						
	Babies		X						
	Girrafes	X	O	X	X				
	Hamsters		X						

Conclusion:

The video that has 5 millions views is Naomi's *Giraffes* video.

Since Naomi created the video Giraffes, and this video has 5 million views, a circle can be drawn at the intersection of Naomi and 5 million views.

		Authors				Titles			
		Louis	Naomi	Rachel	Zandro	Kittens	Babies	Giraffes	Hamsters
Views	3 million		X					X	
	4 million		X					X	
	5 million	X	O	X	X	X	X	O	X
	6 million		X					X	
Titles	Kittens		X						
	Babies		X						
	Girrafes	X	O	X	X				
	Hamsters		X						

Complete the following logic puzzle.

There are four police dogs that belong to the canine (K–9) unit: Benson, Hanson, Madison and Tessa. Once a dog graduates, it is assigned to work with an officer. These officers are: Frederikson, Greek, Jackson and Oliver.

Use the clues and the following chart to determine what month each dog graduated and which officer they were assigned to work with. Each dog graduated in a different month and is assigned to a different officer.

Clues:

1. Madison graduated in October.
2. Tessa was assigned to Officer Jackson.
3. Hanson graduated 2 months after the K–9 unit dog that was assigned to Officer Oliver.
4. The canine assigned to Officer Greek was either Benson or Hanson.
5. Officer Oliver's dog graduated in July.

		Dogs				Officers			
		Benson	**Hanson**	**Madison**	**Tessa**	**Frederikson**	**Greek**	**Jackson**	**Oliver**
Months	**July**								
	August								
	September								
	October								
Officerss	**Frederikson**								
	Greek								
	Jackson								
	Oliver								

Conclusion:

Benson graduated in _____ and is assigned to Officer _____.

Henson graduated in _____ and is assigned to Officer _____.

Madison graduated in _____ and is assigned to Officer _____.

Tessa graduated in _____ and is assigned to Officer _____.

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