



Enigma: Cracking the Code

NAME:

CLASS:

DATE:



Basic

1) Using all the digits from your date of birth, arrange them to make the following (if possible):

- a) largest possible number
- b) smallest possible number
- c) number nearest to 75,000
- d) largest even number
- e) smallest even number
- f) largest odd number
- g) smallest odd number
- h) largest square number

2) Sharon was asked to hang three paintings in a row on the wall. How many different ways could she arrange them?

3) Sharon was then asked to include a fourth painting. How many different ways can she now arrange the paintings?



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Basic

4) Julius Caesar invented the following code: take each letter of the original message, go three along the alphabet and use that letter instead (e.g. A goes to D).

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

Using the above, write the following in code:

a) Your name

b) Your friend's name

c) A message to your friend

5) Decipher the following message using the same code above:

WKLV FRGH ZDV LQYHQWHG EB MXOLXV FDHVDU



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Core

1) Sharon was asked to hang three paintings in a row on the wall. How many different ways could she arrange them?

2) Sharon was then asked to include a fourth painting. How many different ways can she now arrange the paintings?

3) Julius Caesar invented the following code:

Take each letter of the original message, go three along the alphabet and use that letter instead (e.g. A goes to D)

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

4) Using the above, write the following in code:

a) Your name

b) Your friend's name

c) A message to your friend



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Core

5) Decipher the following message using the same code:

WKLV FRGH ZDV LQYHQWHG EB MXOLXV FDHVDU

6) Find each number on the bottom row, and read the coded letters on the top row to break the code.

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
3	21	13	0	20	19	25	15	12	16	17	18	8	2	24	14	9	10	11	5	4	22	23	1	7	6

a) 5 10 7 / 23 10 12 5 12 2 25 / 7 24 4 10 / 24 23 2 / 13 24 0 20 11

b) 7 24 4 / 15 3 22 20 / 21 10 24 17 20 2 / 5 15 20 / 13 24 0 20

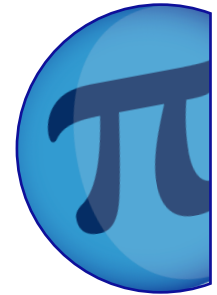


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Advanced

1) Find each number on the bottom row, and read the coded letters on the top row to break the code.

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
3	21	13	0	20	19	25	15	12	16	17	18	8	2	24	14	9	10	11	5	4	22	23	1	7	6

a) 5 10 7 / 23 10 12 5 12 2 25 / 7 24 4 10 / 24 23 2 / 13 24 0 20 11

b) 7 24 4 / 15 3 22 20 / 21 10 24 17 20 2 / 5 15 20 / 13 24 0 20

2) Decode this message: LHWV / FIMH / CQHXRMS / TEH/BIFH / EIL / WIMS / FRF / RT / TXVH / AIY

Clues: The letter F in the code is decoded as D and the letter T is decoded as T.

3) How many numbers can be formed by rearranging the digits in the number 782,093?

4) a) In a three-person race, how many different ways can the first three runners arrive at the finish line?

b) In a four-person race, how many different ways can the first three runners arrive at the finish line?

c) In a five-person race, how many different ways can the first three runners arrive at the finish line?



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ANSWERS

Basic

2) 6

3) 24

5) THIS CODE WAS INVENTED BY JULIUS CAESAR

Core

1) 6

2) 24

5) THIS CODE WAS INVENTED BY JULIUS CAESAR

6) a) Try writing your own codes

b) You have broken the code

Advanced

1) a) Try writing your own codes

b) You have broken the code

2) WELL DONE BREAKING THE CODE HOW LONG DID IT TAKE YOU?

3) 720

4) a) 6

b) 24

c) 60