

MATH SUPERSTARS - 6

Uranus, XII

Name: _____

(This shows my own thinking.)

- ★★ 1. Goldbach, a Russian mathematician, conjectured that every even counting number greater than 2 can be written as the sum of two different prime numbers. For example, $10 = 3 + 7$.

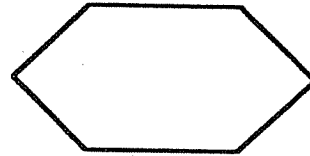
Write each of these as a sum of two different primes:

a) $26 =$ _____

b) $82 =$ _____

- ★ 2. How many diagonals does a hexagon have?

Answer: _____



- ★★ 3. Mrs. Searcy's class is entering a riddle writing contest sponsored by *MATH WIZZ* magazine. Leila wrote this riddle:

Find 3 integers whose product is -36 and whose sum is 5.

What is the answer to Leila's riddle?

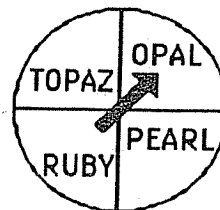
Answer: _____

- ★★ 4. Compute the following: $24 + 33 + 40$

Answer: _____

- ★★★ 5. Mark had to hit the same area of the spinner twice in a row to win his girlfriend a bracelet at the fair. What are his chances of hitting the same area two times in only two spins?

Answer: _____



- ★ 6. Circle the greatest decimal number below.

2.05

2.5

2.005

- ★★ 7. Use the Egyptian Symbol Chart below to write the Egyptian numeral as a decimal numeral.

Egyptian Symbol		Decimal Numeral
	(stroke)	1
∩	(ox yoke)	10
9	(coil of rope)	100
⊕	(lotus plant)	1000
└	(bent finger)	10,000
🐸	(tadpole)	100,000
🧑	(astonished man)	1,000,000

$$\text{└} \text{⊕} \text{999} = \underline{\hspace{2cm}}$$

- ★★★ 8. How can you make change for a dollar using exactly 50 coins and only the coins listed below?

_____ dimes _____ nickels _____ pennies

- ★★★★ 9. The picture shows a peek at a honeycomb. The queen's nest is shown in the center.

- How many nests touch the queen's nest?

- How many nests touch a nest that touches the queen's nest? _____
- The two sets of nests above could be called neighborhoods 1 and 2. How many nests in neighborhood 3? _____
Neighborhood 4? _____
Neighborhood 5? _____
- What is an expression for the number of nests in Neighborhood n ? _____

