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, $10 = 3 + 7$.
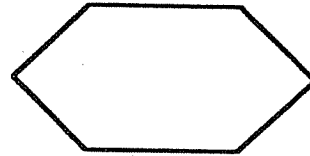
Write each of these as a sum of two different primes:

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.
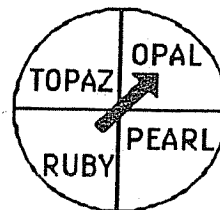
What is the answer to Leila's riddle?

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
ϑ	(coil of rope)	100
☦	(lotus plant)	1000
ſ	(bent finger)	10,000
⊂──✕	(tadpole)	100,000
⚡	(astonished man)	1,000,000

$$ ſſ☦ϑϑϑ = \underline{\hspace{2cm}} $$

★★★ 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.

a. How many nests touch the queen's nest?

_____

b. How many nests touch a nest that touches the queen's nest? _____

c. The two sets of nests above could be called neighborhoods 1 and 2. How many nests in neighborhood 3? _____

Neighborhood 4? _____

Neighborhood 5? _____

d. What is an expression for the number of nests in Neighborhood n? _____

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