Question JV#1:

Nate challenges you to find the maximum value of $z = 2x + 3y$ such that

$$\begin{cases} x + y \leq 6 \\ 2x + y \leq 8 \end{cases}$$

where $x, y$ are non-negative real numbers.
Question JV#2:

A two-digit number is called “special” if, when multiplied by itself, the result is a number whose last two digits are the same as the original number. For example, 25 is a special number, since $25 \cdot 25 = 625$.

Stephanie B. wants you to find another two-digit number that is “special.”
Question JV#3:

Stephanie C. wants to know what is the last digit of $4^{2004}$. 
Question JV#4:

Mrs. Brakebill challenges you to find the coefficient of the term $x^4y^4$ in the binomial expansion $(2x^2 + 5y)^6$. 
Question JV#5:

Nguyen can’t seem to solve this problem, can you help him out? What is the minimum value of $2x^2 + 4x$?
Question JV #6:

Define $K_n$ to be a graph on $n$ vertices with an edge joining any pair of vertices. For example, $K_3$ has 3 edges, $K_4$ has 6 edges, $K_5$ has 10 edges. Patty wonders how many edges are there in $K_{10}$?
Question JV#7:

Professor Wang would like to know in how many ways can he give 3 candy bars to 4 students, given each student can get 0 or more candy bars?
Question JV#8:

Let $\Phi$ be the circle of radius 2 centered at the origin in the plane. Alan wants to know the shortest possible distance between $\Phi$ and the point $\left(\frac{-1}{2}, \frac{\sqrt{265}}{2}\right)$. 
Question JV#9:

Brad wants to know what $x$ will satisfy the equation

$$\frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{x}}}}}}}}}}}}}}}}}}}}}} = 2$$

Can you help him out?
Question JV#10:

Professor Morley loves to factor numbers. He would like to challenge you to factor 26456 into primes.