Problem of the Week

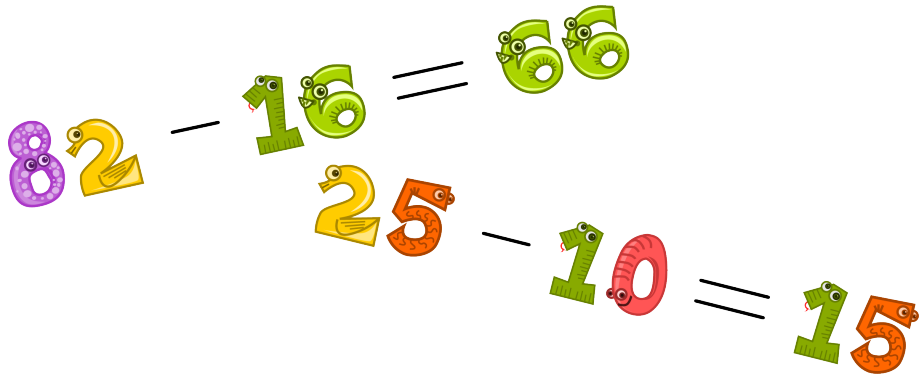
Problem B

Not a Big Difference

Yago takes a two-digit whole number and subtracts the product of its digits. He calls the result a *Yago Number*. He repeats this process with other two-digit numbers to find more Yago Numbers.

For example, the product of the digits of 82 is $8 \times 2 = 16$. Then $82 - 16 = 66$, so 66 is a Yago Number. Similarly, the product of the digits of 25 is $2 \times 5 = 10$. Then $25 - 10 = 15$, so 15 is another Yago Number.

What are the largest and smallest Yago Numbers that you can find? Justify your answers.



Theme: Number Sense