ROUND #1

ROUND #2

ROUND #3

ROUND #5

ROUND #8

Find the value of the following sum of products:

$$1 \cdot 2 + 2 \cdot 3 + 3 \cdot 4 + 4 \cdot 5 + ... + 98 \cdot 99 + 99 \cdot 100$$

Note: You may use a straight brute force approach or consider using the following formulas to assist you.

(1) $1 \quad 2 \quad 3 \quad 4 \quad ... \quad (n \quad 1) \quad n \quad \frac{(n)(n+1)}{2}$

ROUND #9

Pump A alone can fill a swimming pool in 8 hours. Pump B alone can fill the same swimming pool in 7 hours. When both pumps are turned on, the water pressure decreases for both pumps so Pump A and Pump B can only pump at 70% and 80%, respectively, of their normal speeds. How long will it take to fill the swimming pool if both pumps are turned on?

Give your answer in terms of hours and minutes (rounded to the nearest minute).

ROUND #10