"The Nine Chapters on the Mathematical Art" Contest (NCC) 2013 ©

## Student Name:

$\qquad$

1. What is the value of $\square$ in the equation $8+28=\square \times 4$ ?

Answer: $\qquad$
2. Following the order of operations, the result of $3 \times 8-6 \div 2=$ ?

Answer: $\qquad$
3. The perimeter of the shape below is 18 with $\mathrm{AB}=3, \mathrm{BC}=4, \mathrm{AD}=5$. What is the length of CD?


Answer: $\qquad$
4. What is the largest 3-digit number you can make that uses the digits $0,5,2$ only once?

Answer: $\qquad$
5. How many triangles are in the picture below? (Hint: The triangles can be different sizes)


Answer: $\qquad$
6. Grace picks some apples from her orchard to give to her friends Alice and Bob. She gave one more apple to Bob than to Alice. If Alice got 5 apples, how many did Grace pick in total?

Answer: $\qquad$

## Student Name:

$\qquad$
7. Andrea spent $\$ 23$ on strawberry and watermelon candies. She bought 4 strawberry candies which cost $\$ 2$ each. Given the watermelon candies cost $\$ 3$ each, how many watermelon candies did she buy?

Answer: $\qquad$
8. Consider the following game of tic-tac-toe on a 4 x 4 grid. The objective of the game is to place 3 X's (or O's) in a row: horizontally, vertically or diagonally. If it is X's turn to place, how many ways can he or she place the " X " to win immediately?

|  |  | O |  |
| :--- | :--- | :--- | :--- |
| x | o | o |  |
| x | x |  |  |
|  |  |  |  |

Answer: $\qquad$

