

## Yellow Belt Advancement Problem Solving Discipline

**Simplify each expression.**

1)  $-5(b^2 - 2b - 2) - 9(4b - 7)$

2)  $-(5n - 7) - 10(n - 9)$

3) Simplify the following and then evaluate when  $a = -3$  and  $b = 5$ :

$$-4a - 6ab + 10ab - 5a$$

4) Simplify & then Evaluate when  $x = 4$

$$-2(7 - x) + 2x - 3 - 5 - 8x$$

**Evaluate when  $a = -3$  and  $b = 4$**

5) 
$$\frac{5ab + 20}{-2b}$$

**Draw a number line then put the following numbers on it. Make sure you label the line with numbers**

6)  $\sqrt{18}$   $\sqrt{11}$   $\sqrt{24}$

**Label each as rational or irrational, then explain your reasoning:**

7) .333 \_\_\_\_\_

$\sqrt{13}$  \_\_\_\_\_

$\sqrt{49}$  \_\_\_\_\_

**Put the following in order from LEAST to GREATEST**

8)  $\sqrt{12}$  3.67  $\frac{31}{10}$   $3\frac{2}{3}$

**Simplify each expression.**

9)  $2(-4y^2 + 6x^4y^3) - 3(-8y^2 - 3x^4y^3)$

10)  $-6k + 2k^2 + 8k^3 + 8k^2 + 6k^3 - 5k$

## Answers to Yellow Belt Advancement Problem Solving Discipline

- 1)  $-5b^2 - 26b + 73$       2)  $-15n + 97$       3)  $4ab - 9a; -33$       4)  $-4x-22; -38$   
5) 5  
6) 4.2    3.3    4.9      7) rational, irrational, rational      8)  $31/10, 3.5, 3 \frac{2}{3}, 3.67$   
9)  $21x^4y^3 - 16y^2$       10)  $14k^3 + 10k^2 - 11k$