Show all your work.

Simplify each expression.

1. $\left(8-x^{2}+3x^{4}\right)-(5-5x^{2}+x^{3}+3^{4})$
2. $\left(3n^{3}-2n^{4}+3n\right)-(4n^{4}+2n^{3}-3)-(2n^{4}-7n^{3}+6)$
3. $\left(2x-3\right)^{2}$
4. $\left(7v+1\right)\left(7v^{2}-2v+7\right)$
5. $\left(4x^{2}+2x-3\right)\left(2x^{3}-5x^{2}+3\right)$
6. Which of the following is a factor of :

$$2x^{3}-13x^{2}+26x-15$$

* 1. $x+5$
	2. $x+3$
	3. $x-3$
	4. $x-5$
1. Factor $27x^{3}-64y^{3}$, using polynomial identities.
2. Multiply using polynomial identities: $\left(4x+3\right)^{3}$
3. Factor over the complex numbers.

$$x^{2}-8x+20$$

1. What is the 3th term in the expansion of $\left(x+2y\right)^{6}$?
2. Given $p\left(x\right)=x^{2}-2x-8$, which of the following are true?
3. $(x-2)$ is a factor of $p(x)$.
4. $x=4$ os a root of $p\left(x\right).$
5. Solve:

2$a^{2}=-7a-6$

1. Expand the polynomial into standard form: $\left(3x+1\right)^{4}$