**Polynomial Identities & Factoring**

**Expand the product using polynomial identities. Show work!**

**1.** $\left(3-5x\right)^{2}$ 2. $\left(3x+4y\right)^{2}$

3. $\left(2x^{3}-3y\right)\left(2x^{3}+3y\right)$ 4. $\left(x-2\right)(x^{2}+2x+4)$

5. $\left(x+1\right)(x^{2}-x+1)$

**Factor each expression using the polynomial identities. Show work!**

6. $64-25y^{2}$ 7. $y^{2}+8y+16$

8. $27y^{3}-8$ 9. $64z^{3}+27$

10. $9y^{2}-16$