**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**GCF & Factor by GCF**

**Find the GCF of the following polynomials.**

1. $9x+18$

GCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $63x^{2}-72x$

GCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $-33x^{6}+55x^{5}-22x^{2}$

GCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $27x^{7}y^{4}+9x^{5}y^{3}$

GCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Find the GCF then factor.**

1. $32a^{4}-80a^{3}+112a^{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $-7a^{4}+21a^{3}-49a^{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. $54c^{2}d^{3}-36c^{3}d^{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. $-15xy^{4}+60x^{2}y^{3}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. $50a^{5}b^{2}+25a^{3}b^{3}-75a^{4}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. $15x^{3}+5x^{2}-35x$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Simplify each polynomial by performing the operation indicated.**

1. $\left(2x-7\right)\left(3x+5\right)$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $\left(x+5\right)^{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. $(5x^{3}-2x+7)+(2x^{3}+12)$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. $\left(3x+7\right)-\left(x-9\right)$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. $(5x-3y)^{2}$ ( )( )

**Factor the given polynomials.**

1. $x^{2}+3x-10$ ( )( )
2. $x^{2}-8x-20$ ( )( )
3. $x^{2}-x-72$ ( )( )
4. $x^{2}+5x-24$ ( )( )
5. $2x^{2}+14x-18$ ( )( )

 **Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Quiz: Finding the GCF and Factoring**

**Find the GCF of the following polynomials.**

1. $16x+32$

GCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $72x^{2}-63x$

GCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $-33x^{7}+55x^{5}-22x^{3}$

GCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $9x^{6}y^{3}+33x^{4}y^{5}$

GCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Find the GCF then factor.**

1. $54a^{6}-36a^{4}+90a^{3}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $-11a^{8}+33a^{6}-55a^{4}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. $85c^{3}d^{4}-51c^{4}d^{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. $-20xy^{5}+60x^{3}y^{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. $60a^{6}b^{3}+15a^{4}b^{4}-105a^{5}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. $36x^{3}+18x^{2}-24x$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Simplify each polynomial by performing the operation indicated.**

1. $\left(3x-7\right)\left(2x+5\right)$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. $\left(x+6\right)^{2}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. $(4x^{3}-2x+7)+(7x^{3}+12)$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. $\left(4x-8\right)-\left(x-6\right)$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Factor: $x^{2}+9x+14$ ( )( )