Warm Up Questions

1. $20x^5y^3(3x^{-2}y^5 - 7x^5)$

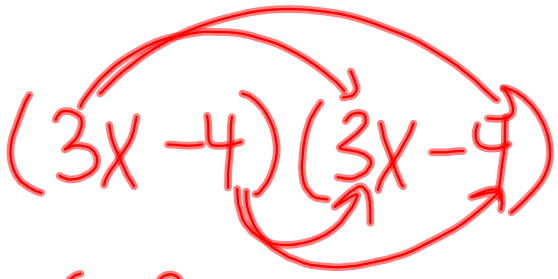
2. $(3x - 4)^2$

3. $(2x - 5)(5x^2 - 3x - 1)$

1. $20x^5y^3(3x^{-2}y^5 - 7x^5)$

$= 60x^3y^8 - 140x^{10}y^3$

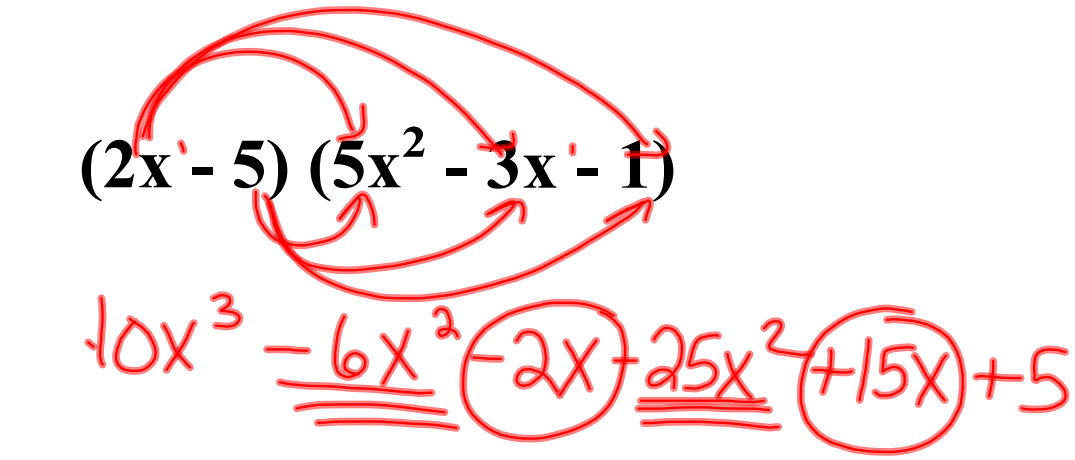
2. $(3x - 4)^2$



$9x^2 - 12x - 12x + 16$

$= 9x^2 - 24x + 16$

3. $(2x - 5)(5x^2 - 3x - 1)$



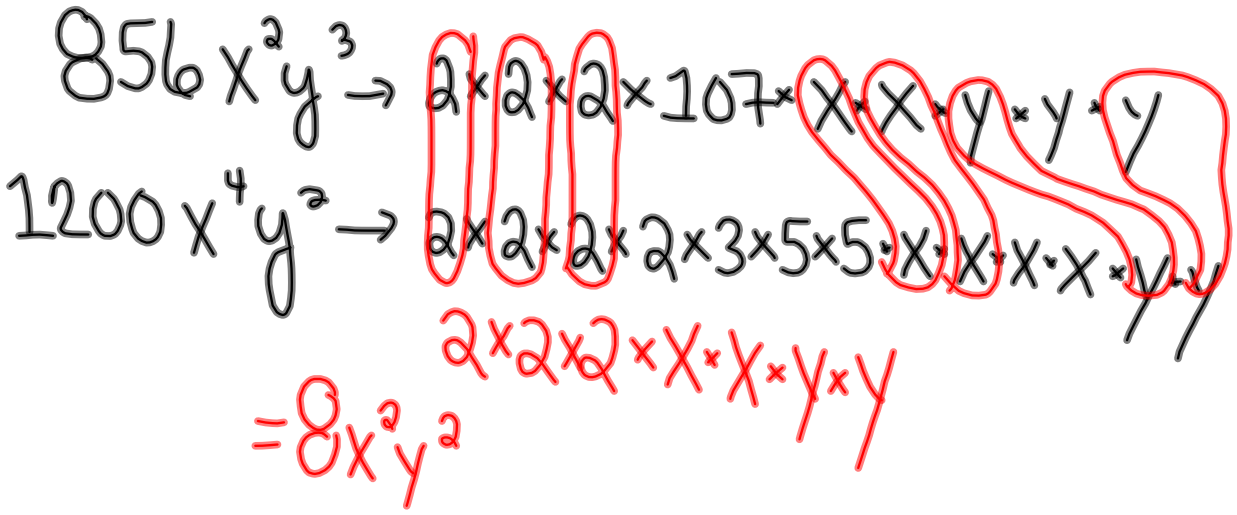
$10x^3 - 6x^2 - 2x + 25x^2 + 15x + 5$

$= 10x^3 - 31x^2 + 13x + 5$

What is the Greatest Common Factor?

Prime Factorization !!

$856x^2y^3$ AND $1200x^4y^2$



Notice Anything?

Anything Common?

$$3x + 10xy - 7xyz$$

Remember

$3x + 10xy - 7xyz$

$3x \rightarrow 3 \cdot x$

$10xy \rightarrow 2 \cdot 5 \cdot x \cdot y$

$7xyz \rightarrow 7 \cdot x \cdot y \cdot z$

$3x + 10xy - 7xyz$

$= x(3 + 10y - 7yz)$

What do you notice?

$$x^6 + x^5$$

$$x^6 + x^5$$

$x^6 = x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x$

$x^5 = x \cdot x \cdot x \cdot x \cdot x$

$x \cdot x \cdot x \cdot x \cdot x = x^5$

Take out the greatest common factor, which will be the smallest of the powers!!

$x^5(x^1 + 1)$

Check: $x^5(x^1 + 1)$

$x^6 + x^5$

14xy + 28xyz

$14 = 2 \cdot 7 \cdot x \cdot y$

$28 = 2 \cdot 2 \cdot 7 \cdot x \cdot y \cdot z$

$2 \cdot 7 \cdot x \cdot y = 14xy$

$14xy(1 + 2z)$

Check: $14xy(1+2z)$

$= 14xy + 28xyz$

Common Factoring

1. $a^5c^6z^{11} + a^9c^{10}z^{13}$

$= a^5c^6z^{11}(1 + a^4c^4z^2)$

2. $25x^7 - 15x^5$

$= 5x^5(5x^2 - 3)$

3. $12x^7y^8 - 24x^9y^4$

$12x^7y^4(1y^4 - 2x^2)$

4. $13x^2y^5w^3 - 39x^5y^2w + 26x^3y$

$= 13x^2y(1y^4w^3 - 3x^3yw + 2x)$

5. $91x - 7y$

$= 7(13x - 1y)$

6. $2x^5y^3 - 8x^2y^2 + 10y$

$= 2y(x^5y^2 - 4x^2y + 5)$