Review Polynomials Part 1
Multiplying polynomials, Factoring the difference of perfect squares and factoring the GCF

1) $(4x-3)(7x+2)$

$28x^2+8x-21x-6$

$28x^2-13x-6$

2) $(3x-3)(4x^2+2x-5)$ $1x^1$

$12x^3+6x^2-15x$

$-12x^2-6x+15$

$12x^3-6x^2-21x+15$

Write each number in prime-factorization form.

3) 328 $2\cdot2\cdot2\cdot41$

$2\cdot164$

$2\cdot2\cdot82$

$2\cdot2\cdot2\cdot41$

2, 3, 5, 7, 11, 13, 17, 19...

4) 484 $2\cdot2\cdot11\cdot11$

$2\cdot242$

$2\cdot2\cdot121$

$2\cdot2\cdot11\cdot11$

2, 3, 5, 7, 11, 13, 17, 19

$1\cdot19$

State the GCF (greatest common factor) for each pair of numbers

5) 180, 252 36

6) 49, 98 49

180 = 2 · 90 = 2 · 2 · 45 = 2 · 2 · 3 · 15 = 2 · 2 · 3 · 3 · 5

252 = 2 · 126 = 2 · 2 · 63 = 2 · 2 · 3 · 27 = 2 · 2 · 3 · 3 · 9 = 2 · 2 · 3 · 3 · 3 · 3

36

49 = 7 · 7

98 = 2 · 49 = 2 · 7 · 7

49

Factor each polynomial completely. Difference perfect sq.

7) $x^2 - 9$ $(x+3)(x-3)$ $\sqrt{x^2} = x$ $\sqrt{9} = 3$

8) $4y^2 - 25$ $(2y+5)(2y-5)$ $\sqrt{4y^2} = 2y$ $\sqrt{25} = 5$

9) $m^2 - 4n^2$ $(m+2n)(m-2n)$ $\sqrt{m^2} = m$ $\sqrt{4n^2} = 2n$

$a^2 - b^2 = (a+b)(a-b)$ $\sqrt{a^2} = a$ $\sqrt{b^2} = b$

Factor. Write prime, if prime. GCF

10) $3x^2 - 9x + 18$

$3(x^2 - 3x + 6)$

$\frac{3x^2}{3} - \frac{9x}{3} + \frac{18}{3}$

11) $8x^3y^2 + 4x^3$

$4x^3(2y^2 + 1)$

$\frac{8x^3y^2}{4x^3} + \frac{4x^3}{4x^3}$

12) $-48a^2b^2 - 56a^3b - 56a^5b$

$8a^2b(-6b - 7a - 7a^3)$

13) $3m^5n - 7mn^2 + 18$

PRIME