

Assignment Sheet

- 1.) Worksheet (GCF Only)
- 2.) Worksheet (GCF Only)
- 3.) Worksheet (GCF and DOTS)
- 4.) Worksheet (GCF and DOTS)
- 5.) Page 622 #18 - 26 all
- 6.) Page 607 #1 - 8 all
- 7.) Page 607 #12 - 24 column
- 8.) Page 607 #13 - 25 column
- 9.) Page 607 #14 - 26 column
- 10.) Page 614 #5 - 8
- 11.) Page 614 #15 - 30 column
- 12.) Page 614 #16 - 31 column
- 13.) Page 614 #17 - 32 column
- 14.) Page 617 #10 - 18
- 15.) Page 622 #27 - 38
- 16.) Worksheet (GCF and Grouping)
- 17.) Worksheet (GCF and Grouping)
- 18.) Worksheet (GCF and Grouping)
- 19.) Worksheet (GCF and Grouping)
- 20.) Packet (Complete Factoring)
- 21.) Packet (Complete Factoring)
- 22.) Packet (Complete Factoring)
- 23.) Packet (Complete Factoring)
- 24.) Packet (Complete Factoring)

Section 1: Factoring by Greatest Common Factor (GCF)

Introduction To Factoring

The process of finding factors, in most cases, we want to factor until all remaining factors are prime (meaning that the remaining factors only factor by 1 and itself)

Create a factor tree and write the prime factorization of:

291,060

Greatest Common Factor (GCF)

- The golden rule of factoring
- The first step to factoring any polynomial is to remove a GCF
- The GCF is the largest factor (number/variable) that divides into ALL terms

E1) $12x^3z + 24x^2z$

P1) $12m^2n - 18mn^2$

E2) $6x^2y + 10xy^2 - 6xy$

P2) $2m^3n + 5m^2n^2 - 3mn^3$

E3) $2x^3 - 4x^2 + 10x - 2$

P3) $3z^3 + 15z^2 - 6z + 21$

Section 2: Factoring Binomials

Steps to Factoring Binomials

1.) Factor out a Greatest Common Factor (GCF)

2.) Factor using:

Difference of Two Squares (DOTS)

$$a^2 - b^2 \text{ factors to } \underline{\hspace{2cm}}$$

Difference of Two Cubes

$$a^3 - b^3 \text{ factors to } \underline{\hspace{2cm}}$$

Sum of Two Cubes

$$a^3 + b^3 \text{ factors to } \underline{\hspace{2cm}}$$

E1) $3x^2 + 75$

P1) $15x^3 - 25x$

E2) $x^2 - 25$

P2) $z^2 - 36$

E3) $81 - x^4$

P3) $64 - z^6$

E4) $-49 + x^2y^4$

P4) $-81 + a^4b^4$

$$\text{E5) } 2x^5 - 2x$$

$$\text{P5) } 5y^4 - 245$$

$$\text{E6) } 2x^5 - 32x$$

$$\text{P6) } 3x^2 - 9$$

$$\text{E7) } x^2 - 9$$

$$\text{P7) } x^8 - 1$$

$$\text{E8) } 16x^6 - 54$$

$$\text{P8) } 3x^9 + 24$$

Steps to Factoring Trinomials

1.) Factor out a Greatest Common Factor (GCF)

2.) Factor using:

Guess (Intelligently) and (Quick) Check Method

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E1) $2x^2 + 8x + 4$

P1) $5x^2 + 35x + 5$

E2) $6x^2y + 10xy^2 - 4xy$

P2) $2m^3n + 5m^2n^2 - 3mn^3$

E3) $x^2 + 5x + 6$

P3) $x^2 + 9x + 14$

$$E4) x^2 + 4x - 5$$

$$P4) y^2 + y - 20$$

$$E5) x^2 - 8x + 15$$

$$P5) a^2 - 8x + 7$$

$$E6) -a^2 - 7a - 10$$

$$P6) -x^2 + 4x + 3$$

$$E7) m^2 - mp - 6p^2$$

$$P7) x^2 + 4xy - 12y^2$$

$$E8) m^4 - 5m^2 + 6$$

$$P8) x^4 + 4x^2 - 21$$

$$E9) 2x^2 - 24x + 54$$

$$P9) 3x^3 + 9x^2 - 30x$$

Steps to Factoring Trinomials

1.) Factor out a Greatest Common Factor (GCF)

2.) Factor using:

Guess (Intelligently) and (Quick) Check Method

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E1) $2x^2 + 7x + 3$

P1) $2x^2 + 9x + 7$

E2) $-7x + 4x^2 - 2$

P2) $-2 + 3x^2 + x$

E3) $30x^3 + 9x^2 - 3x$

P3) $6x^2 - 2x - 4$

Section 5: Grouping (4-Term Polynomials)

Steps to Factoring Polynomials with 4-Terms

1.) Factor out a Greatest Common Factor (GCF)

2.) Factor By Grouping

E1) $5x^2 + 10x + 5y + 15$

P1) $3x^2 + 6x + 15xy + 3xz$

E2) $x^3 - 3x^2 + 2x - 6$

P2) $y^3 - y^2 + 7y - 7$

E3) $12z^2 - 7x - 4xz + 21z$

P3) $6m^2 + 3mn - 4m - 2n$

E4) $a^3 + a - a^2 - 1$

P4) $x^6 - 6x^5 - x + 6$

E5) $5z^3 + 5z^2 + 10z + 10$

P5) $4a^4 - 4a^3 + 6a^2 - 6a$

Section 6: Mixed Madness

Steps

Binomial

Trinomial

4-Terms

1) GCF

1) GCF

1) GCF

2) DOTS/SOC/DOC

2) Guess and Check

2) Grouping

E1) $4a^2 + 12ab + 9b^2 - 25c^2$

P1) $81x^4 - 16$

E2) $45x^2 - 80y^2$

P2) $21 - 7t + 3r - rt$

E3) $4a^2 + a - 3$

P3) $2t^3 + 32t^2 + 128t$

Warm-ups

Use the provided spaces to complete any warm-up problem or activity

Date:	Date:
Date:	Date:
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