MATH 5071 - Problem Set 2

Dr. Rachael M. Kratzer, rmk24@psu.edu

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Greatest Common Factor

1) Separate each term into its prime factors. Then, factor completely:
$6a - 20$

2) Separate each term into its prime factors. Then, factor completely:
$35x^4y^2 + 21x^3y^3 - 56x^5y^7$

3) Separate each term into its prime factors. Then, factor completely:
$4x^3(3y+5)^3 - 20x^2(3y+5)^2 - 16x^4(3y+5)^4$

Factoring By Grouping

4) Factor by grouping: $-3x^3 + 4x^2 + 9x - 12$

5) Factor by grouping: $12x^2 + 18xy + 2x + 3y$

6) Factor by grouping: $-4x^2 - 2x + 10x + 5$

7) Factor by grouping: $-15x^2 - 12y + 6xy + 30x$

8) Factor by grouping: $3y^4 + 9y^2 - 6y^3 - 18y$

Factoring Trinomials

9) Factor completely: $y^2 + 7y + 10$

10) Factor completely: $t^2 + 2t - 15$

11) Factor completely: $x^2 - 7xy - 30y^2$

12) Factor completely: $a^2 + 16ab + 28b^2$

13) Factor completely: $2c^2f - 18cdf + 36d^2f$

14) Factor completely: $3s^2 + 12st - 63t^2$

15) Factor completely: $6x^2 + 10x - 4$

Special Factoring

16) Factor completely: $81k^2 - 180k + 100$

17) Factor completely: $25m^2 - 64$

18) Factor completely: $x^4 - 1$

19) Factor completely: $a^6 - 8$

20) Factor completely: $u^2 - 2uv + v^2 - w^2$

21) Factor completely: $4a^2 + 12ab + 9b^2 - m^2 + 8mn - 16n^2$

22) Factor completely: $9x^4 + 45x^2 + 14$

23) Factor completely: $15a^6 + 31a^3 - 24$