MPM 2D1 Name:_____

Factoring

1. Common factor each expression.

a) $9x^2 - 6x + 18$ b) $-25m^2 - 10m$ c) $3b^2 + 15b$

d) $2b(b+4) + 5(b+4)$ e) $25a^2 - 20a$ f) $27y^3 - 9y^4$

2. Factor each simple trinomial.

a) $x^2 + 4x + 3$ b) $n^2 + n - 6$ c) $a^2 - 9a + 20$

d) $y^2 + 6y - 40$ e) $3x^2 + 24x + 45$ f) $6n^2 + 24n - 30$

3. Factor each complex trinomial.

a) $2x^2 + x - 6$ b) $4m^2 - 16m + 15$ c) $6f^2 + 11f + 3$

4. Factoring each difference of squares.

a) $9a^2 - 16$ b) $121 - a^2$ c) $4x^2 - 256$

5. Factor completely.

a) $x^2 + 6x - 16$ b) $25a^2 - 20a$ c) $2y^2 - 2y - 60$

6. For each of the following, factor, then identify:
   i) The direction of opening.
   ii) The zeros.
   iii) The axis of symmetry.
   iv) The vertex.

a) $y = x^2 + x - 42$

b) $y = 6x^2 - 12x$

c) $y = 3x^2 - 12x + 12$