

NAME: \_\_\_\_\_

*P.I. A.A.20: Factor algebraic expressions completely, including trinomials with a lead coefficient of one (after factoring a GCF)*

Factor:

1.  $9x^2 - 21x^5$

[A]  $3(3x^2 - 7x^5)$  [B]  $x^2(9 - 21x^3)$

[C]  $3x^2(3 - 7x^3)$  [D]  $3x(3x - 7x^4)$

2.  $3x^3 - 6x^2 + 6x$

[A]  $x(3x^2 - 6x + 6)$  [B]  $3x(x^2 - 2x + 2)$

[C]  $3(x^3 - 2x^2 + 2x)$  [D]  $3x(x - 2)(x + 2)$

3.  $35x^4 - 42x^7$

[A]  $x^4(35 - 42x^3)$  [B]  $7x^4(5 - 6x^3)$

[C]  $7(5x^4 - 6x^7)$  [D]  $7x^3(5x - 6x^6)$

4.  $5x^3 - 15x^2 + 15x$

[A]  $x(5x^2 - 15x + 15)$

[B]  $5x(x^2 - 3x + 3)$  [C]  $5(x^3 - 3x^2 + 3x)$

[D]  $5x(x - 3)(x + 3)$

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

[A]  $x^5(25 - 15x^2)$  [B]  $5x^5(5 - 3x^2)$

[C]  $5(5x^5 - 3x^7)$  [D]  $5x^4(5x - 3x^6)$

6.  $35x^4 - 28x^7$

[A]  $x^4(35 - 28x^3)$  [B]  $7x^4(5 - 4x^3)$

[C]  $7(5x^4 - 4x^7)$  [D]  $7x^3(5x - 4x^6)$

7.  $2x^3 + 6x^2 + 8x$

[A]  $x(2x^2 + 6x + 8)$  [B]  $2x(x + 3)(x + 4)$

[C]  $2(x^3 + 3x^2 + 4x)$  [D]  $2x(x^2 + 3x + 4)$

8.  $40x^5 - 48x^8$

[A]  $8x^5(5 - 6x^3)$  [B]  $8x^4(5x - 6x^7)$

[C]  $8(5x^5 - 6x^8)$  [D]  $x^5(40 - 48x^3)$

9.  $\frac{3}{7}x^7 - \frac{5}{7}x^6 + \frac{1}{7}x^5 - \frac{2}{7}x^3$

10.  $\frac{1}{7}x^7 - \frac{1}{7}x^6 + \frac{6}{7}x^5 - \frac{4}{7}x^3$

11. Factor  $15m^4 - 6m^2 + 9m$ .

[A]  $m(15m^3 - 6m + 9)$

[B]  $3m(5m^3 - 2m + 3)$

[C]  $3(5m^4 - 2m^2 + 3m)$

[D]  $3m(5m^4 - 2m^2 + 3m)$

[E] cannot be factored