

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