Academic Algebra I Name _____

9.8b Study Tip - Sample of each type of factoring (circle answer)

Factor each completely.

1) $-36x^2 - 120x$

$-12x(3x - 10)$

FACTOR GCF and (-1) for negative leading coef.

2) $-12x^3 - 6x^2 - 20x$

$-2x(6x^2 + 3x + 10)$

3) $7n^2 - 10n + 3$

1·7 1·3

$(7n - 3)(n - 1)$

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

1·3 1·4 2·2

$(3x - 4)(x + 1)$

5) $50x^2 - 8$

$2(25x^2 - 4)$

$2(5x - 2)(5x + 2)$

6) $16n^2 - 225$

$(4n + 15)(4n - 15)$

7) $16n^2 - 24n + 9$

$(4n - 3)(4n - 3)$

$(4n - 3)^2$

8) $125b^2 + 50b + 5$

$5(25b^2 + 10b + 1)$

$5(5b + 1)(5b + 1)$ OR

$5(5b + 1)^2$

9) $20m^3 - 4m^2 + 25m - 5$

$4m^2(5m - 1) + 5(5m - 1)$

$(5m - 1)(4m^2 + 5)$

10) $15n^3 + 40n^2 + 3n + 8$

$5n^2(3n + 8) + 1(3n + 8)$

$(3n + 8)(5n^2 + 1)$

11) $5n^3 - 3n^2 - 20n + 12$

$n^2(5n - 3) - 4(5n - 3)$

$(5n - 3)(n^2 - 4)$

$(5n - 3)(n - 2)(n + 2)$

12) $-42x^3 - 30x^2 + 12x$

$-6x(7x^2 + 5x - 2)$

$-6x(7x - 2)(x + 1)$

Academic Algebra 1 Name _____

9.8a Study Tip - Sample of each type of factoring (circle answer) ① Factor GCF

Factor each completely.

1) $-16x^2 + 28x$

$-4x(4x - 7)$

2) $9x^9 - 18x^4 - 18x^3$

$9x^3(x^6 - 2x - 2)$

3) $5n^2 + 8n + 3$

$1 \cdot 5 \quad 1 \cdot 3$

$(5N + 3)(N + 1)$

4) $5x^2 - 34x + 24$

1 24
2 12
3 8
4 6

$1 \cdot 5$

$(5x - 4)(x - 6)$

5) $9v^2 - 16$

$(3v + 4)(3v - 4)$

6) $27x^4 - 12x^2$

$3x^2(9x^2 - 4)$

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

7) $25x^2 - 40x + 16$

$(5x - 4)(5x - 4)$

$(5x - 4)^2$

8) $16x^2 + 40x + 25$

$(4x + 5)(4x + 5)$ or $(4x + 5)^2$

9) $20x^3 - 16x^2 + 25x - 20$

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

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

10) $48n^3 + 42n^2 + 8n + 7$

$6N^2(8N + 7) + 1(8N + 7)$

$(8N + 7)(6N^2 + 1)$

11) $8x^3 - 3x^2 - 32x + 12$

$x^2(8x - 3) - 4(8x - 3)$

$(8x - 3)(x^2 - 4)$

$(8x - 3)(x + 2)(x - 2)$

12) $5x^3 - 30x^2 + 40x$

$5x(x^2 - 6x + 8)$

$5x(x - 2)(x - 4)$