SM2 5.4: Factoring Quadratic Form

Name_____ ID: 1

Date_____ Period_____

Factor each completely.

1) $6x^4 + 54x^3 - 60x^2$

$6x^2(x - 1)(x + 10)$

2) $n^3 - 16n^2 + 64n$

$n(n - 8)^2$

3) $3x^2 + 25x + 42$

$(3x + 7)(x + 6)$

4) $16x^2 - 92x - 24$

$4(x - 6)(4x + 1)$

5) $-a^4 + a^2 + 2$

$-(a^2 - 2)(a^2 + 1)$

6) $6u^4 + 12u^2 - 210$

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

7) $3u^4 - 18u^2 + 24$

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

8) $-x^4 - 14x^2 - 45$

$-(x^2 + 9)(x^2 + 5)$

9) $25x^4 - 95x^2 + 90$

$5(5x^2 - 9)(x^2 - 2)$

10) $20m^4 - 116m^2 + 144$

$4(5m^2 - 9)(m - 2)(m + 2)$

11) $7x^4 + 48x^2 - 64$

$(7x^2 - 8)(x^2 + 8)$

12) $7x^4 + 74x^2 + 40$

$(7x^2 + 4)(x^2 + 10)$

13) $48x^4 + 156x^2 + 90$

$6(4x^2 + 3)(2x^2 + 5)$

14) $18m^4 + 72m^2 + 70$

$2(3m^2 + 5)(3m^2 + 7)$

15) $125x^4 - 125x^2 - 70$

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

16) $24x^4 + 110x^2 + 100$

$2(3x^2 + 10)(4x^2 + 5)$

17) $21x^8 + 45x^4 - 54$

$3(7x^4 - 6)(x^4 + 3)$

18) $20u^6 + 41u^3 - 9$

$(4u^3 + 9)(5u^3 - 1)$

19) $3x^4 - 588$

$3(x^2 + 14)(x^2 - 14)$

20) $a^4 - 400$

$(a^2 + 20)(a^2 - 20)$

21) $r^4 - 49$

$(r^2 + 7)(r^2 - 7)$

22) $20p^4 - 980$

$20(p^2 + 7)(p^2 - 7)$

23) $x^4 - 81$

$(x - 3)(x + 3)(x - 3i)(x + 3i)$

24) $x^4 - 16$

$(x - 2)(x + 2)(x - 2i)(x + 2i)$

25) $x^8 - 256$

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

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