

Extra Factoring WS 1

Name

Fuston

Factor the expression.

1.  $x^2 - x - 6 = (x-3)(x+2)$

2.  $x^2 - 6x + 5 = (x-5)(x-1)$

3.  $2x^6 + 8x^5 + 7x^4 = x^4(2x^2 + 8x + 7)$

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

5.  $x^2 - 6x - 7 = (x-7)(x+1)$

6.  $x^2 + 10x - 11 = (x+11)(x-1)$

7.  $x^2 + 4x - 5 = (x+5)(x-1)$

8.  $x^2 - 4x - 5 = (x-5)(x+1)$

9.  $5x^5 - 80x = 5x(x^4 - 16) = 5x(x^2 + 4)(x^2 - 4) = 5x(x+2i)(x-2i)(x+2)(x-2)$

10.  $x^3 - 3x^2 - 4x + 12 = x^2(x-3) - 4(x-3) = (x-3)(x^2-4) = (x-3)(x+2)(x-2)$

11.  $8x^2 - 98 = 2(4x^2 - 49) = 2(2x+7)(2x-7)$

12.  $x^2 - 2x - 63 = (x-9)(x+7)$

13.  $x^2 - 64 = (x+8)(x-8)$

14.  $8y^2 - 18y - 5 = (4y+1)(2y-5)$

15.  $20x^3 - 4x^2 - 72x = 4x(5x^2 - x - 18) = 4x(5x+9)(x-2)$

16.  $x^2 - 10x - 96 = (x-16)(x+6)$

17.  $x^2 + 10x - 96 = (x+16)(x-6)$

18.  $18z^3 - 21z^2 + 30z - 35 = 3z^2(6z-7) + 5(6z-7) = (6z-7)(3z^2+5) \leftarrow \text{OK}$

19.  $x^2 + 4x - 45 = (6z-7)(\sqrt{3}z+i\sqrt{5})(\sqrt{3}z-i\sqrt{5}) = (x+9)(x-5)$

20.  $x^2 + 9x - 36 = (x+12)(x-3)$

21.  $12x^3 - 16x^2 + 3x - 4 = 4x^2(3x-4) + 1(3x-4) = (3x-4)(4x^2+1) = (3x-4)(2x+i)(2x-i)$

22.  $x^2 + 11x - 80 = (x+16)(x-5)$

23.  $7x^2 - 15x + 2 = (7x-1)(x-2)$

24.  $8x^2 - 6x + 1 = (4x-1)(2x-1)$

25.  $8x^2 - 11x + 3 = (8x-3)(x-1)$

26.  $12x^2 - 8x + 1 = (6x-1)(2x-1)$

27.  $9x^2 + 3x - 2 = (3x-1)(3x+2)$

28.  $6x^2 + 11x - 2 = (6x-1)(x+2)$

29.  $2x^2 + 4x - 6 = 2(x^2 + 2x - 3) = 2(x+3)(x-1)$

30.  $8x^2 + 7x - 1 = (8x-1)(x+1)$