

East Los Angeles College
Department of Mathematics
Math 115
Test 4

Factor out the GCF

1. $14x^2 - 12x$

2. $9x - 12$

3. $x^4 + 6x^2$

4. $5x^3 + 10x$

Factor by grouping

5. $8x^2 - 10x + 20x - 25$

6. $x^3 - 3x^2 - 7x + 21$

7. $x^3 + 6x^2 - 6x - 36$

8. $2x^3 - 4x^2 + 3x - 6$

Factor

9. $x^2 - x - 12$

10. $x^2 + 12x + 36$

11. $x^2 + 2x - 15$

12. $x^2 - 11x + 28$

13. $2x^2 + 11x - 6$

14. $6x^2 + x - 1$

15. $4x^2 + 8x - 5$

16. $4x^2 - x - 5$

Use factoring formulas to factor the following.

17. $x^2 - 49$

18. $9x^2 - 4$

19. $x^2 - 4$

20. $16x^2 - 1$

21. $x^3 + 8$

22. $x^3 - 64$

23. $27x^3 + 8$

24. $64x^3 - 125$

25. What is your name?

Answer Sheet

1	$2x(7x-6)$	14	$(2x+1)(3x-1)$
2	$3(3x-4)$	15	$(2x+5)(2x-1)$
3	$x^2(x^2+6)$	16	$(x+1)(4x-5)$
4	$5x(x^2+2)$	17	$(x+7)(x-7)$
5	$(4x-5)(2x+5)$	18	$(3x+2)(3x-2)$
6	$(x-3)(x^2-7)$	19	$(x+2)(x-2)$
7	$(x+6)(x^2-6)$	20	$(4x+1)(4x-1)$
8	$(x-2)(2x^2+3)$	21	$(x+2)(x^2-2x+4)$
9	$(x-4)(x+3)$	22	$(x-4)(x^2+4x+16)$
10	$(x+6)(x+6)$	23	$(3x+2)(9x^2-6x+4)$
11	$(x+5)(x-3)$	24	$(4x-5)(16x^2+20x+25)$
12	$(x-7)(x-4)$	25	Solutions
13	$(x+6)(2x-1)$		

math 11S Test 4

(1) $14x^2 - 12x$

$$\boxed{2x(7x-6)}$$

(2) $9x - 12$

$$\boxed{3(3x-4)}$$

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

$$\boxed{x^2(x^2+6)}$$

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

$$\boxed{5x(x^2+2)}$$

(5) $8x^2 - 10x + 20x - 25$

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

$$\boxed{(4x-5)(2x+5)}$$

(6) $x^3 - 3x^2 - 7x + 21$

$$x^2(x-3) + 7(x-3)$$

$$\boxed{(x-3)(x^2+7)}$$

(7) $x^3 + 6x^2 - 6x - 36$

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

$$\boxed{(x+6)(x^2-6)}$$

(8) $2x^3 - 4x^2 + 3x - 6$

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

$$\boxed{(x-2)(2x^2+3)}$$

(9) $x^2 - x - 12$

prod = -12

Sum = -1

$(-4, 3)$

$$\boxed{(x-4)(x+3)}$$

(10) $x^2 + 12x + 36$

prod = 36

Sum = 12

$(6, 6)$

$$\boxed{(x+6)(x+6)}$$

(11) $x^2 + 2x - 15$

prod = -15

Sum = 2

$(5, -3)$

$$\boxed{(x+5)(x-3)}$$

(12) $x^2 - 11x + 28$

prod = 28

Sum = -11

$(-7, -4)$

$$\boxed{(x-7)(x-4)}$$

$$(13) \quad 2x^2 + 11x - 6$$

$$\text{prod} = -12$$
$$\text{Sum} = 11$$

$$(12, -1)$$

$$2x^2 + 12x - 1x - 6$$

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

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

$$(14) \quad 6x^2 + x - 1$$

$$\text{prod} = -6$$
$$\text{Sum} = 1$$

$$(3, -2)$$

$$6x^2 + 3x - 2x - 1$$

$$3x(2x+1) - 1(2x+1)$$

$$(2x+1)(3x-1)$$

$$(15) \quad 4x^2 + 8x - 5$$

$$\text{prod} = -20$$
$$\text{Sum} = 8$$

$$(10, -2)$$

$$4x^2 + 10x - 2x - 5$$

$$2x(2x+5) - 1(2x+5)$$

$$(2x+5)(2x-1)$$

$$(16) \quad 4x^2 - x - 5$$

$$\text{prod} = -20$$
$$\text{Sum} = -1$$

$$(4, -5)$$

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

$$4x(x+1) - 5(x+1)$$

$$(x+1)(4x-5)$$

$$(17) \quad x^2 - 49$$

$$x^2 - 7^2$$

$$(x+7)(x-7)$$

$$(18) \quad 9x^2 - 4$$

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

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

$$(19) \quad x^2 - 4$$

$$x^2 - 2^2$$

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

$$(20) \quad 16x^2 - 1$$

$$(4x)^2 - 1^2$$

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

(21) $x^3 + 8$

$$x^3 + 2^3$$

$$\boxed{(x+2)(x^2 - 2x + 4)}$$

(22) $x^3 - 64$

$$x^3 - 4^3$$

$$\boxed{(x-4)(x^2 + 4x + 16)}$$

(23) $27x^3 + 8$

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

$$(3x+2)(13x)^2 \neq 3x \cdot 2 + 2^2$$

$$\boxed{(3x+2)(9x^2 - 6x + 4)}$$

(24) $64x^3 - 125$

$$(4x)^3 - 5^3$$

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

$$\boxed{(4x-5)(16x^2 + 20x + 25)}$$