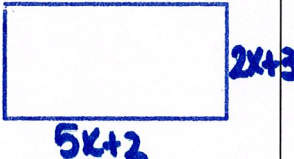
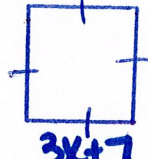
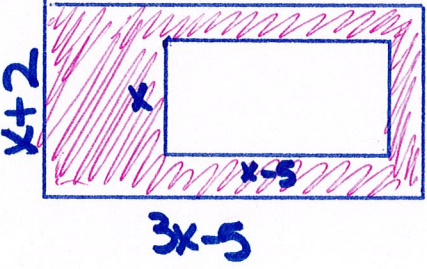
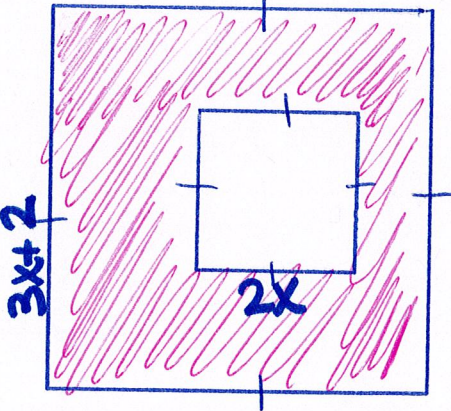


Simplify. Write your answer in standard form. Name your answer based on the degree and number of terms.

1. $5x^2 - 4x^3 + 2x - x^3 - 2x$	2. $3x^5 + 4x^2 - x^3 + 6x^5 - 5x^2 + 2x^3$
3. $3m(6m^2 - 7m)$	4. $-4v(3v^3 - 2v^2)$
5. $(2x^2 - 4x + 5) + (x^2 - x + 8)$	6. $(5x^2 - 8x - 9) + (6x - 2x^2 - 5)$
7. $(2x^2 - 4x + 5) - (x^2 - x + 8)$	8. $(5x^2 - 8x - 9) - (6x - 2x^2 - 5)$
9. Find the perimeter 	10. Find the perimeter 
11. State the GCF: $5x^3 - 10x^2 + 25x$	12. State the GCF: $4x^8 - 12x^5 + 8x^3$
13. Multiply $(x - 6)(x - 12)$	14. Multiply: $(x + 5)(x - 8)$

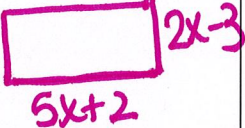
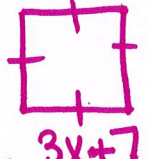
<p>15. Multiply $(3x - 8)^2$</p>	<p>16. Multiply $(5x + 4)^2$</p>
<p>17. Multiply: $(3x - 8)(3x + 8)$</p>	<p>18. Multiply $(9x + 2)(9x - 2)$</p>
<p>19. Multiply $(6x - 7y)(2x + 3y)$</p>	<p>20. Multiply $(2a + 3b)(4a - b)$</p>
<p>21. Multiply $(2x - 1)(3x^2 - 8x + 1)$</p>	<p>22. Multiply $(3x + 2)(4x^2 - x - 5)$</p>
<p>23. Find the area of the shaded region</p> 	<p>24. Find the area of the shaded region</p> 
<p>25. Factor: $x^2 + 14x + 49$</p>	<p>26. Factor: $x^2 - 6x + 9$</p>

27. Factor: $x^2 - 6x - 27$	28. Factor: $x^2 + x - 56$
29. Factor: $x^2 - 144$	30. Factor: $4x^2 - 169$
31. Factor: $5x^2 - 20$	32. Factor: $8x^2 - 72$
33. Factor: $2x^2 - 3x - 14$	34. Factor: $15x^2 + x - 6$
35. Factor: $18x^2 - 9x - 20$	36. Factor: $8x^2 - 10x + 3$
37. Factor: $18n^2 + 9n + 1$	38. Factor: $10n^2 - 7n + 1$
39. Factor: $4x^2 - 44x + 121$	40. Factor: $9x^2 + 30x + 25$

41. Factor: $4x^2 - 28x + 40$	42. Factor: $3x^2 + 12x - 36$
43. Factor: $4x^2 - 18x - 10$	44. Factor: $18x^2 - 21x - 9$
45. Factor: $8x^2 - 2xy - y^2$	46. Factor: $6a^2 - 17ab + 12b^2$
47. Factor: $6x^2 + 19xy + 10y^2$	48. Factor: $8a^2 - 2ab - 21b^2$
49. Factor by grouping: $16x^2 + 40x - 12x - 30$	50. Factor by grouping: $12x^2 - 42x - 18x + 63$
51. Bonus: $(7x + 3)^3$	52. Bonus: $(2x - 1)^4$

Name Key

Simplify. Write your answer in standard form. Name your answer based on the degree and number of terms.

<p>1. $5x^2 - 4x^3 + 2x - x^3 - 2x$ $-5x^3 + 5x^2$ cubic binomial</p>	<p>2. $3x^5 + 4x^2 - x^3 + 6x^5 - 5x^2 + 2x^3$ $9x^5 + x^3 - x^2$ Quintic trinomial</p>
<p>3. $3m(6m^2 - 7m)$ $18m^3 - 21m^2$ cubic binomial</p>	<p>4. $-4v(3v^3 - 2v^2)$ $-12v^4 + 8v^3$ quartic binomial</p>
<p>5. $(2x^2 - 4x + 5) + (x^2 - x + 8)$ $3x^2 - 5x + 13$ quadratic trinomial</p>	<p>6. $(5x^2 - 8x - 9) + (6x - 2x^2 - 5)$ $3x^2 - 2x - 14$ quadratic trinomial</p>
<p>7. $(2x^2 - 4x + 5) - (x^2 - x + 8)$ $x^2 - 3x - 3$ quadratic trinomial</p>	<p>8. $(5x^2 - 8x - 9) - (6x - 2x^2 - 5)$ $7x^2 - 14x - 4$ quadratic trinomial</p>
<p>9. Find the perimeter $2(5x+2) + 2(2x-3)$ $10x+4+4x-6$ $14x-2$ linear binomial</p> 	<p>10. Find the perimeter $4(3x+7)$ $12x+28$ linear binomial</p> 
<p>11. State the GCF: $5x^3 - 10x^2 + 25x$ $5x$</p>	<p>12. State the GCF: $4x^8 - 12x^5 + 8x^3$ $4x^3$</p>
<p>13. Multiply $(x-6)(x-12)$ $x^2 - 18x + 72$</p>	<p>14. Multiply: $(x+5)(x-8)$ $x^2 - 3x - 40$</p>

15. Multiply
 $(3x - 8)^2$

$$9x^2 - 48x + 64$$

16. Multiply
 $(5x + 4)^2$

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

17. Multiply:
 $(3x - 8)(3x + 8)$

$$9x^2 - 64$$

18. Multiply
 $(9x + 2)(9x - 2)$

$$81x^2 - 4$$

19. Multiply
 $(6x - 7y)(2x + 3y)$

$$12x^2 + 4xy - 21y^2$$

20. Multiply
 $(2a + 3b)(4a - b)$

$$8a^2 + 10ab - 3b^2$$

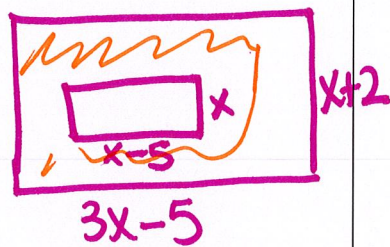
21. Multiply
 $(2x - 1)(3x^2 - 8x + 1)$

$$6x^3 - 19x^2 + 10x - 1$$

22. Multiply
 $(3x + 2)(4x^2 - x - 5)$

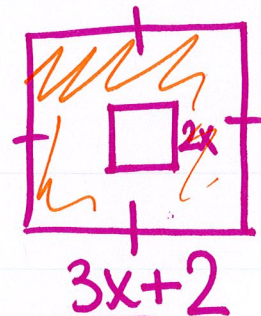
$$12x^3 + 5x^2 - 17x - 10$$

23. Find the area of the shaded region



$$2x^2 + 6x - 10$$

24. Find the area of the shaded region



$$5x^2 + 12x + 4$$

25. Factor: $x^2 + 14x + 49$

$$(x + 7)^2$$

26. Factor: $x^2 - 6x + 9$

$$(x - 3)^2$$

27. Factor: $x^2 - 6x - 27$

$$(x-9)(x+3)$$

28. Factor: $x^2 + x - 56$

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

29. Factor: $x^2 - 144$

$$(x+12)(x-12)$$

30. Factor: $4x^2 - 169$

$$(2x+13)(2x-13)$$

31. Factor: $5x^2 - 20$

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

32. Factor:

$$8x^2 - 72$$
$$8(x^2 - 9)$$
$$8(x+3)(x-3)$$

33. Factor: $2x^2 - 3x - 14$

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

34. Factor: $15x^2 + x - 6$

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

35. Factor: $18x^2 - 9x - 20$

$$(6x+5)(3x-4)$$

36. Factor: $8x^2 - 10x + 3$

$$(2x-1)(4x-3)$$

37. Factor: $18n^2 + 9n + 1$

$$(6n+1)(3n+1)$$

38. Factor: $10n^2 - 7n + 1$

$$(5n-1)(2n-1)$$

39. Factor: $4x^2 - 44x + 121$

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

40. Factor: $9x^2 + 30x + 25$

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

41. Factor: $4x^2 - 28x + 40$

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

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

42. Factor: $3x^2 + 12x - 36$

$$3(x^2 + 4x - 12)$$

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

43. Factor: $4x^2 - 18x - 10$

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

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

44. Factor: $18x^2 - 21x - 9$

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

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

45. Factor: $8x^2 - 2xy - y^2$

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

46. Factor: $6a^2 - 17ab + 12b^2$

$$(3a - 4b)(2a - 3b)$$

47. Factor: $6x^2 + 19xy + 10y^2$

$$(3x + 2y)(2x + 5y)$$

48. Factor: $8a^2 - 2ab - 21b^2$

$$(4a - 7b)(2a + 3b)$$

49. Factor by grouping: $16x^2 + 40x - 12x - 30$

$$2[8x^2 + 20x - 6x - 15]$$

$$2[4x(2x+5) - 3(2x+5)]$$

$$2(4x-3)(2x+5)$$

50. Factor by grouping: $12x^2 - 42x - 18x + 63$

$$3[4x^2 - 14x - 6x + 21]$$

$$3[2x(2x-7) - 3(2x-7)]$$

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

51. Bonus: $(7x + 3)^3$

$$343x^3 + 441x^2 + 189x + 27$$

52. Bonus: $(2x - 1)^4$

$$16x^4 - 32x^3 + 24x^2 - 8x + 1$$