

Multiple Choice:

Write the letter of your choice in the space provided. **1 pt each.**

1.	2.	3.	4.	5.
6.	7.	8.	9.	10.

Free Response:

Show all work for credit. Write your final answer in the space provided. **5 pts each unless otherwise indicated.**

11. Factor out the GCF: $2x^5 - 4x^4 + 12x^3$	12. Factor by Grouping $3mx - 2x + 15m - 10$
13. Factor the quadratic trinomial: $x^2 - 6x + 5$	14. Factor the quadratic trinomial: $2x^2 - 5x - 12$
15. Factor the difference of squares: $25x^2 - 9$	16. Factor the perfect square trinomial: $25x^2 + 30x + 9$
17. Factor completely: $6x^3 + 33x^2 + 45x$	18. Factor completely: $2x^3 - 32x$

Multiple Choice

1. The polynomial  $x^2 + x - 30$  is factorable. One factor is  $(x + 6)$ , what is the other factor?

A.  $(x + 1)$

B.  $(x - 5)$

C.  $(x + 3)$

D.  $(x + 5)$

2. Which of the following is a factor of  $2x^2 - 50$  ?

A.  $(x + 5)$

B.  $(x - 10)$

C.  $(x + 25)$

D.  $(x - 1)$

3. Which of the following is a factor of  $2x^2 + 9x - 35$  ?

A.  $(x - 7)$

B.  $(x - 5)$

C.  $(x + 7)$

D.  $(x + 5)$

4. The expression  $x^2 + bx + c$  factors to the expression  $(x + p)(x + q)$  where  $b, c, p,$  and  $q$  represent non-zero rational numbers. If  $b > 0$  and  $c > 0$ , then which of the following statements is true?

A. both  $p$  and  $q$  are positive

B.  $p$  is positive and  $q$  is negative where  $|p| > |q|$

C.  $p$  is positive and  $q$  is negative where  $|p| < |q|$

D. both  $p$  and  $q$  are negative

5. Factor completely:  $3x^7 - 15x^5$

A.  $3(x^7 - 5x^5)$

B.  $3x^5(x^2 - 5)$

C.  $x^5(3x^2 - 15)$

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

6. Factor out -1 from the polynomial:  $5 - x$

A.  $-1(x + 5)$

B.  $-1(5 - x)$

C.  $-1(-x - 5)$

D.  $-1(-5 + x)$

7. Factor completely:  $3x + 18 + xy + 6y$

A.  $(x + 6)(3 + y)$

B.  $(y + 6)(3x + y)$

C.  $(y + 6)(x + 3)$

D.  $(x + 6y)(3 + y)$

8. Factor the trinomial completely. If the polynomial cannot be factored, write “prime.”

$$x^2 - x - 72$$

A.  $(x - 8)(x + 9)$

B.  $(x - 8)(x - 9)$

C.  $(x - 9)(x + 8)$

D. prime

9. Factor the trinomial completely. If the polynomial cannot be factored, write “prime.”

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

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

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

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

D. prime

10. Factor the binomial completely. If the polynomial cannot be factored, write “prime.”

$$81x^2 - 25$$

A.  $(9x + 5)^2$

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

C.  $(9x + 5)(9x - 5)$

D. prime