

Factoring Quadratics

HSA.SSE.A.2

Name _____ Date _____

Factor each expression completely. Check your work by expanding the factored form back to the original.

1. Factor out the greatest common factor: $6x^2 + 9x$.

2. Factor out the greatest common factor: $10y^3 - 15y^2$.

3. Factor: $x^2 + 7x + 12$.

4. Factor: $x^2 + 9x + 20$.

5. Factor: $x^2 - 8x + 15$.

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

7. Factor: $x^2 - 3x - 10$.

8. Factor the difference of squares: $x^2 - 49$.

9. Factor the difference of squares: $4x^2 - 25$.

10. Which of these is a correct factorization of $x^2 - 36$?

A) $(x - 6)^2$

B) $(x + 6)(x - 6)$

C) $(x + 6)^2$

D) $x(x - 36)$

11. Factor completely (look for a GCF first): $2x^2 + 10x + 12$.

12. Factor completely: $3x^2 - 27$.

13. Factor: $2x^2 + 7x + 3$.

14. Factor: $3x^2 - 10x - 8$.

15. A square garden of side x has a square 5 ft by 5 ft fountain removed from one corner. The remaining area is $x^2 - 25$. Factor this expression, then find the area when $x = 9$ ft.

16. A rectangle has area $x^2 + 11x + 24$ square units. Factor to find expressions for its length and width, and state which is longer.