|  |  |
| --- | --- |
| **1.)**  f(x) = x2 - 4x + 3 | Vertex: \_\_\_\_\_\_\_  Maximum or minimum value: \_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |
| **2.)** *k(x) = x*2 – 6x + 9 | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |
| **3.)**  *h*(*x) =* 2*x*2 - 8*x* + 5 | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |

***hFactor.***

4. *x*2 + 6*x* – 16 5. *x*2 - *x* – 56 6. *x*2 + 12*x* + 20

7. *x*2 – 14*x* + 72 8. *x*2 + 18*x* + 81 9. *x*2 – 5*x* - 50

10. 2*x*2 + 7*x* + 5 11. 6*x*2 + 5*x* – 6 12. 5*x*2 + 6*x* – 8

13. 2*x*2 – 3*x* – 20 14. 5*x*2 – 17*x* + 14 15. 3*x*2 – 43*x* – 30

Find the discriminant to determine the number and nature of the roots of the equation.

16.  17. 

18.  19. 

20 9*x*2 – 6*x* = 1 21. 4*x*2 = 5*x* + 3

***Solving Quadratic Equations Using Square Roots***

* **Isolate the variable or expression being squared (get it \_\_\_\_\_\_\_\_\_\_\_\_\_\_)**
* **Square root both sides of the equation (include + and – on the right side!)**
* **This means you have \_\_\_\_\_\_\_\_\_\_\_\_\_ equations to solve!!**
* **Solve for the variable (make sure there are no roots in the denominator)**

22. *x*2 = 25 23. 3*x*2 = 81

24. 4*x*2 – 1 = 0 25. 