|  |  |
| --- | --- |
| **1.)**  f(x) = x2 - 6x + 8 | Vertex: \_\_\_\_\_\_\_  Maximum or minimum value: \_\_\_\_\_\_\_  *x*-intercepts: \_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |
| **2.)** *k(x) = x*2 – 4x + 16 | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |
| **3.)**  *h*(*x) =* 4*x*2 +16*x* + 15 | Vertex: \_\_\_\_\_\_\_  Max or min? \_\_\_\_\_\_\_  Direction of opening? \_\_\_\_\_\_\_  Axis of symmetry: \_\_\_\_\_\_\_\_ |

***Factor.***

4. *x*2 + 10*x* +24 5. *x*2 - 10*x* – 56 6. *x*2 + 11*x* + 30

7. *x*2 – 14*x* - 72 8. *x*2 + 16*x* + 64 9. *x*2 – 15*x* + 50

10. 2*x*2 + 7*x* + 3 11. 6*x*2 - 5*x* – 4 12. 5*x*2 + 6*x* – 8

13. 2*x*2 – 3*x* – 9 14. 6*x*2 – 13*x* + 6 15. 3*x*2 – 2*x* – 5

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

16. 17.

18. 19. 5

20 2*x*2 = -5x - 4 21. 2*x*2 = - 5*x* + 4