Secondary 2H **Name**_____ **Desk** _____

Unit 10 **HW: Parabolas**

Score _____

Can a parabola have a focus at (2, 3) and a vertex (3, -1). Explain why or why not.

Find the equation of the parabola given the following information.

1. Focus: (0, 3) Vertex (0, 0)

2. Focus: (-2, 0) Vertex (0, 0)

3. Directrix: $y = -1$ Vertex (0, 0)

4. Directrix: $x = 7$ Vertex (0, 0)

5. Focus: (2,1) Vertex (2, -1)

6. Focus: (-5, -1) Vertex (-2, -1)

7. Directrix: $x = -2$ Vertex: (3, 2)

8. Direxitrix: $y = 2$ Vertex (5, -2)

Given the following equations for parabolas, find the focus and directrix.

9. $x^2 = 16y$

10. $y^2 = 4x$

11. $x^2 = \frac{1}{4}y$

12. $y^2 = 5x$

Determine the vertex, focus, directrix, and the direction for each of the following parabolas.

13. $(x-3)^2 = 12(y+1)$

14. $(x+4)^2 = -32(y-1)$

15. $(y-1)^2 = -4(x+5)$

16. $(x+1)^2 = 8(y-3)$

17. $(y+3)^2 = 12(x-2)$

18. $(y-6)^2 = 16(x-4)$

Use the Distance Formula to find the equation of the parabola with the given information.

19. Focus: (-2, 0) Directrix: $x = 2$

20. Focus: (0,1) Directrix: $y = -1$

21. Focus: (6, 0) Directrix: $x = -6$

22. Focus: (0, -3) Directrix: $y = 3$

23. Focus: (1, -2) Directrix: $x = 4$

24. Focus: (-4, -6) Directrix: $y = -4$

25. Focus: (-3, 3) Directrix: $x = -2$