**M3 GRAPHING PARABOLAS HW**  NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Sketch the graph of each function. Then state the vertex, focus, and directrix.*

1. $y=\frac{1}{4}(x-3)^{2}+2$ 2. $y=\frac{1}{8}(x+4)^{2}+1$



3. $y=\frac{-1}{4}(x-4)^{2}-4$ 4. $y=\frac{-1}{16}(x+2)^{2}-1$



5. $y=\frac{-1}{4}(x-2)^{2}+1$ 6. $y=\frac{-1}{16}(x-2)^{2}+4$





*Find the equation of the parabola given the information provided. Show all of your work.*

7. $Focus: \left(6,8\right) Directrix:y=6 $ 8. $Focus: \left(2,10\right) Directrix:y=8$

9. $Focus: \left(-9,10\right) Directrix:y=8$ 10. $Focus: \left(-2,1\right) Directrix:y=-1$

11. $Focus: \left(8,5\right) Directrix:y=13$ 12. $Focus: \left(3,-8\right) Directrix:y=-6$