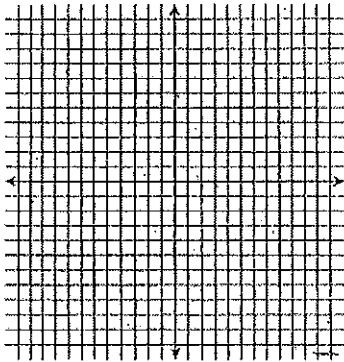


Parabola Conic Practice

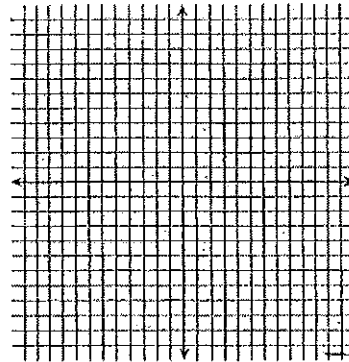
Graph the following parabolas:

1. $x = \frac{1}{28}y^2$



vertex _____
focus _____
axis of sym _____
directrix _____

2. $y = -\frac{1}{36}x^2$



vertex _____
focus _____
axis of sym _____
directrix _____

Use the following information to write a parabolic equation:

3. vertex at $(0, 0)$ and focus at $(0, 8)$

3. _____

4. vertex at $(0, 0)$ and a directrix at $y = -7$

4. _____

5. Vertex at origin, opens left,
 $\frac{1}{8}$ units between the vertex and focus

5. _____

6. vertex at $(-4, -3)$ and focus at $(1, -3)$

6. _____

7. vertex at $(5, 3)$ and a directrix at $y = 6$

7. _____

8. vertex at $(2, 6)$ and directrix at $y = 8$

8. _____

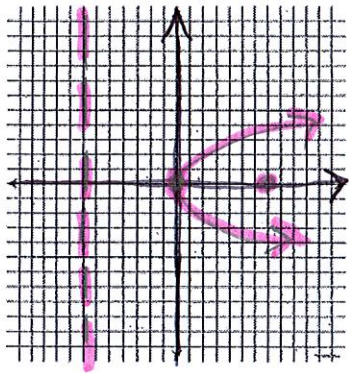
9. Focus $(1, 3)$, directrix $y = 1$

9. _____

$d = \text{distance}$ $a = \text{"a" constant}$
 in $\underline{ax^2 + bx + c}$
 or $\underline{a(x-h)^2 + k}$
 $d = \frac{1}{4a}$ or $a = \frac{1}{4d}$ **Parabola Conic Practice**

Graph the following parabolas:

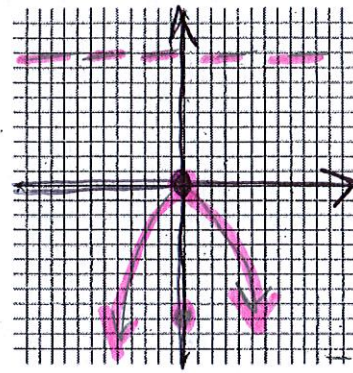
1. $x = \frac{1}{28}y^2$



vertex $(0,0)$
 focus $(7,0)$
 axis of sym $y=0$
 directrix $x=-7$

$d = \frac{1}{4(\frac{1}{28})} = \frac{1}{\frac{1}{7}} = 7$

2. $y = -\frac{1}{36}x^2$



vertex $(0,0)$
 focus $(0,-9)$
 axis of sym $x=0$
 directrix $y=9$

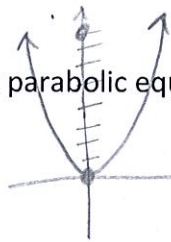
$d = \frac{1}{4(-\frac{1}{36})} = \frac{1}{-\frac{1}{9}} = -9$

distance can't be negative!

Use the following information to write a parabolic equation:

3. vertex at $(0, 0)$ and focus at $(0, 8)$

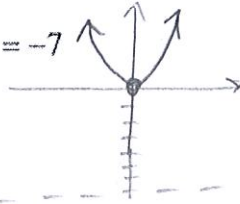
$d = 8$ $a = \frac{1}{4(8)} = \frac{1}{32}$



3. $y = \frac{1}{32}x^2$

4. vertex at $(0, 0)$ and a directrix at $y = -7$

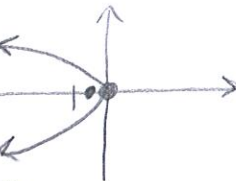
$d = 7$ $a = \frac{1}{4(7)} = \frac{1}{28}$



4. $y = \frac{1}{28}x^2$

5. Vertex at origin, opens left,

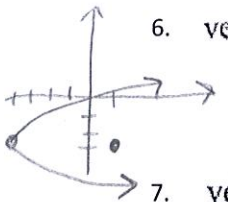
$\frac{1}{8}$ units between the vertex and focus
 $d = \frac{1}{8}$ $a = \frac{1}{4(\frac{1}{8})} = \frac{1}{\frac{1}{2}} = 2$



5. $x = -2y^2$
 negative b/c goes left

6. vertex at $(-4, -3)$ and focus at $(1, -3)$

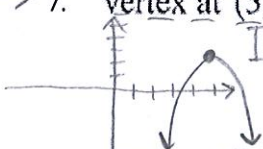
$d = 5$ $a = \frac{1}{4(5)} = \frac{1}{20}$



6. $x = \frac{1}{20}(y+3)^2 - 4$
 negative b/c goes down

7. vertex at $(5, 3)$ and a directrix at $y = 6$.

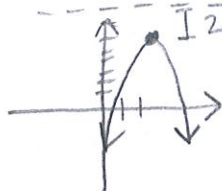
$d = 3$ $a = \frac{1}{4(3)} = \frac{1}{12}$



7. $y = -\frac{1}{12}(x-5)^2 + 3$

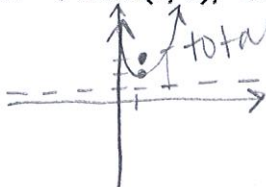
8. vertex at $(2, 6)$ and directrix at $y = 8$

$d = 2$ $a = \frac{1}{4(2)} = \frac{1}{8}$



8. $y = -\frac{1}{8}(x-2)^2 + 6$

9. Focus $(1, 3)$, directrix $y = 1$



total distance = 2
 vertex will be half way

vertex = $(1, 2)$
 $d = 1$ ← distance from vertex to focus
 $a = \frac{1}{4(1)} = \frac{1}{4}$

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