MAC1140 SEC29 Quiz 10-12-2007 9.2

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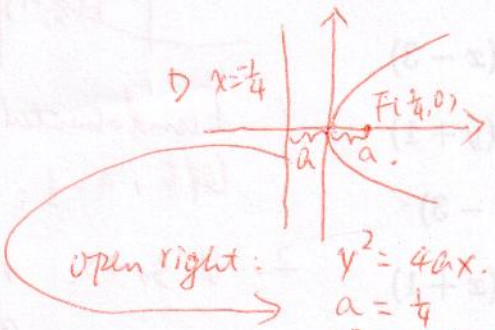
1.

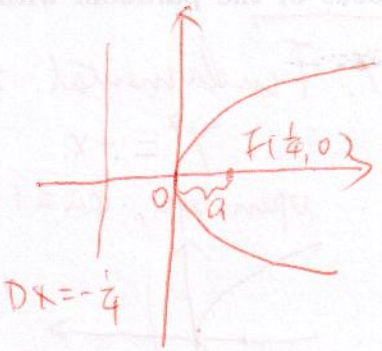
[9.2.2bPT]Select the equation of the parabola with focus at $(\frac{1}{4}, 0)$ and directrix the line $x = -\frac{1}{4}$.

- ○ $y^2 = \frac{1}{4}x$
- ○ $y^2 = -x$
- ● $y^2 = x$
- ○ $x^2 = y$



2. [9.2.2ePT]Find the directrix of the parabola given by $y^2 = x$.

- ○ $x = \frac{1}{4}$
- ● $x = -\frac{1}{4}$
- ○ $y = \frac{1}{4}$
- ○ $y = -\frac{1}{4}$



4a = 1, a = 1/4

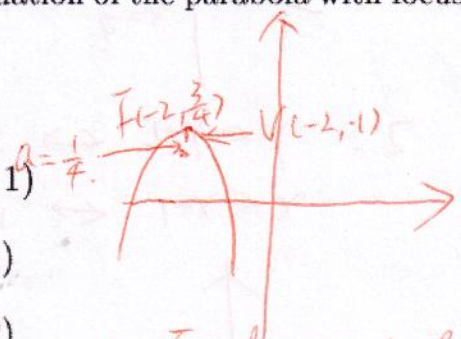
y² = 4ax ← left/right

open right.

3.

[9.2.3aPT]Select the equation of the parabola with focus at $(-2, \frac{3}{4})$ and vertex at $(-2, 1)$.

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

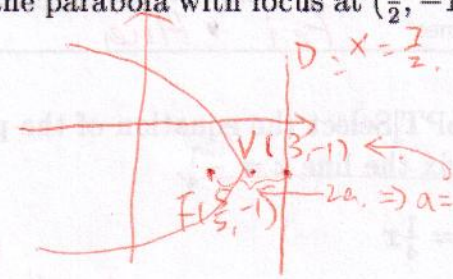


1. Fundamental form.
down, a = 1/4: $x^2 = -4ay = -y$.
2. V(-2,1), up by 1, ↔ y-1
left by 2, ↔ x+2.
$(x+2)^2 = -(y-1)$.

4.

[9.2.3cPT]Select the equation of the parabola with focus at $(\frac{5}{2}, -1)$ and directrix $x = \frac{7}{2}$.

- ○ $(x-3)^2 = -2(y+1)$
- ● $(y+1)^2 = -2(x-3)$
- ○ $(y+1)^2 = -8(x-3)$
- ○ $(x-3)^2 = -8(y+1)$
- ○ $(y+1)^2 = 2(x-3)$
- ○ $(y-3)^2 = -2(x+1)$



1. Fundamental form:
left, $a = \frac{1}{2}$: $y^2 = -4ax = -2x$.

2. V(3,-1): right by 3 $\leftrightarrow$ $x \leftarrow x-3$.
down by 1 $\leftrightarrow$ $y \leftarrow y+1$.

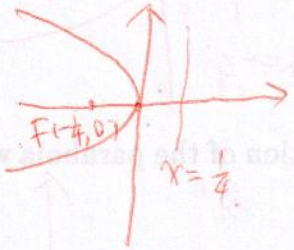
$(y+1)^2 = -2(x-3)$

5.

[9.2.3dPT]Find the focus of the parabola with equation $(y+2)^2 = -(x-1)$

- ● $(\frac{3}{4}, -2)$
- ○ $(-2, 1)$
- ○ $(-2, \frac{3}{4})$
- ○ $(1, -2)$
- ○ $(-\frac{3}{4}, -2)$

1. Fundamental form.
$y^2 = -x$.
open left, $4a = 1 \Rightarrow a = \frac{1}{4}$.



2. $y \leftarrow y+2$ $\leftrightarrow$ down by 2
$x \leftarrow x-1$ $\leftrightarrow$ right by 1.