# CHAPTER 8

1. 406
2. $1237
3. $2.46
4. 4/3
5. 11/12
6. 1/6, 1/30, 1/560, 1/22680, 1/1596672
7. -0.586
8. $192890.25
9. 90
10. 97%
11. 40/81
12. 2/7
13. 12
14. 358800
15. $6750
16. 9/10
17. 15

# Chapter 9 Review

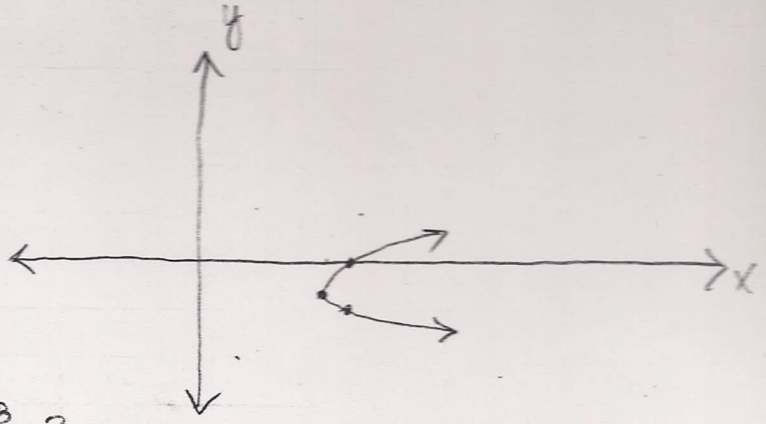
① $-2y^2 + 2x - 3y = 6$

$2x = 2y^2 + 3y + 6$

$x = (y^2 + \frac{3}{2}y + \frac{9}{16}) + 3 - \frac{9}{16}$

$x = (y + \frac{3}{4})^2 + \frac{39}{16}$

$\boxed{V(2\frac{7}{16}, -\frac{3}{4})}$ opens right




x int: $x = (0 + \frac{3}{4})^2 + \frac{39}{16} = \frac{9}{16} + \frac{39}{16} = \frac{48}{16} = 3$

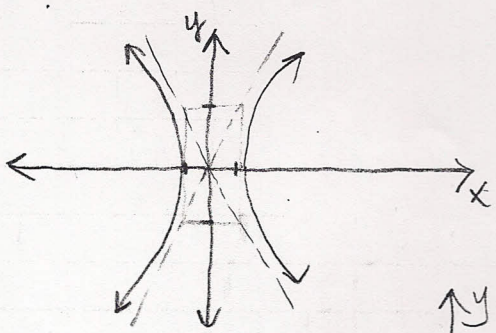
$\boxed{(3,0)}$

② $100x^2 - 16y^2 - 25 = 0$

$\frac{100}{25}x^2 - \frac{16}{25}y^2 = \frac{25}{25}$

$\frac{x^2}{\frac{1}{4}} - \frac{y^2}{\frac{25}{16}} = 1$

$\pm\frac{1}{2}$ $\pm\frac{5}{4}$



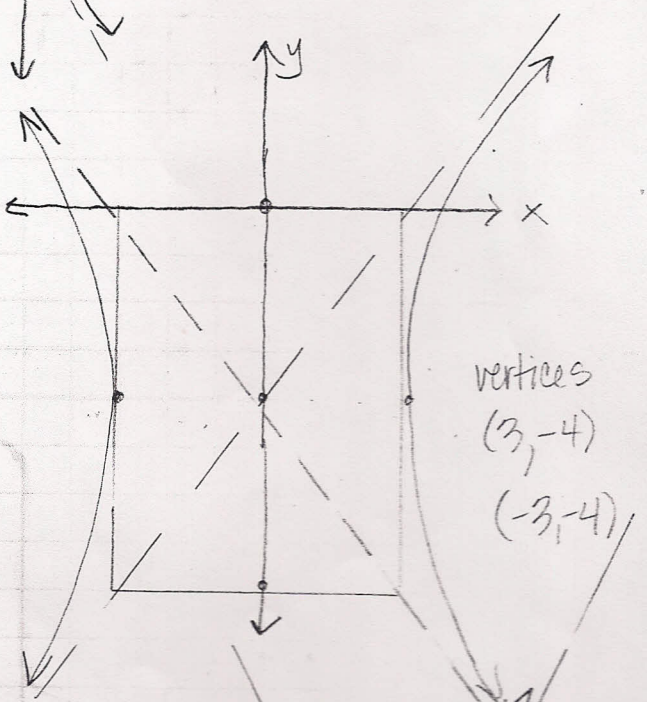

vertices: $(\pm\frac{1}{2}, 0)$

③ $16x^2 - 9y^2 - 72y - 288 = 0$

$16x^2 - 9(y^2 + 8y + 16) = 288 - 144$

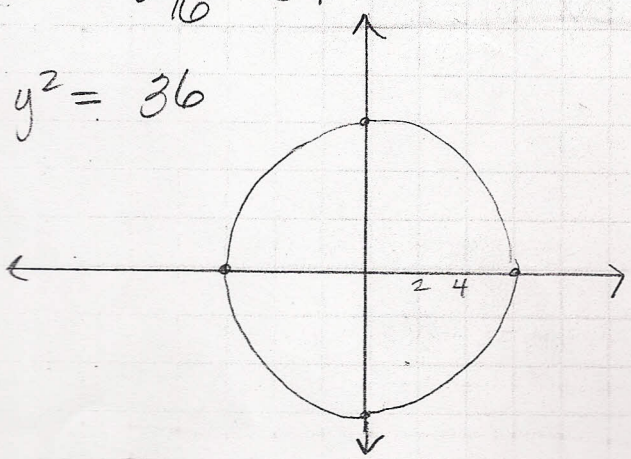
$\frac{16x^2}{144} - \frac{9(y+4)^2}{144} = \frac{144}{144}$

$\frac{x^2}{9} - \frac{(y+4)^2}{16} = 1$




vertices
(3, -4)
(-3, -4)

④ $x^2 + y^2 = 36$



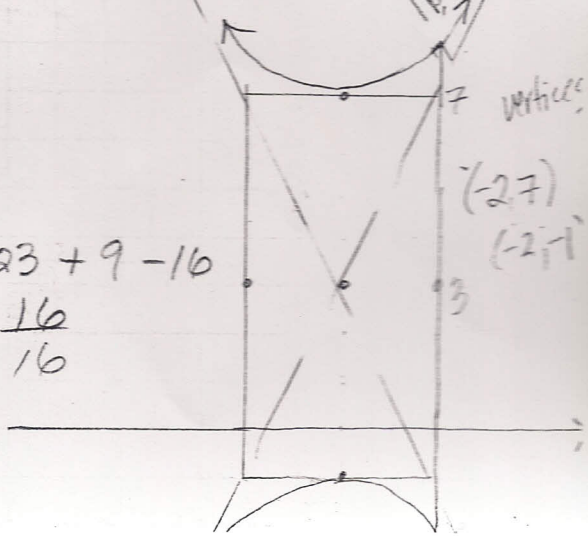

⑤ $-4x^2 + y^2 - 16x - 6y - 23 = 0$

$(y^2 - 6y + 9) - 4(x^2 + 4x + 4) = 23 + 9 - 16$

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

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

opens up & down



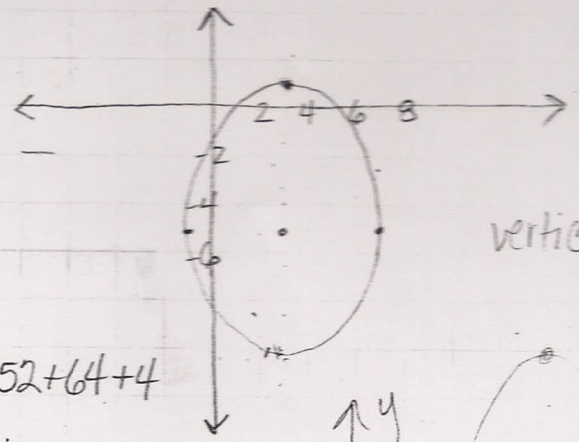

vertices
(-2, 7)
(-2, -1)

⑥ $9x^2+4y^2-54x+40y+37=0$

$9(x^2-6x+9)+4(y^2+10y+25)=-37+81+100$

$\frac{9(x-3)^2}{144}+\frac{4(y+5)^2}{144}=\frac{144}{144}$

$\frac{(x-3)^2}{16}+\frac{(y+5)^2}{36}=1$




c(3,-5)

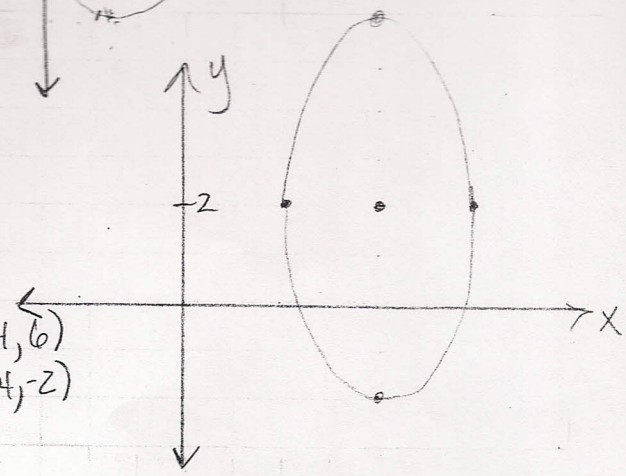
vertices (3,1)
(3,-11)

⑦ $4x^2+y^2-32x-4y+52=0$

$4(x^2-8x+16)+(y^2-4y+4)=-52+64+4$

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

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




c(4,2) vertices (4,6)
(4,-2)

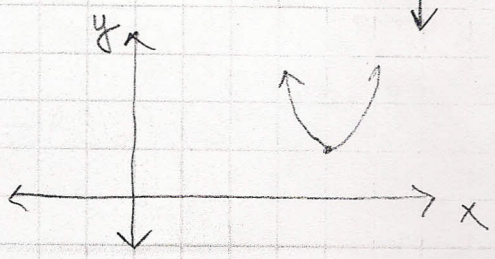
⑧ $(x-4)^2=2(y-1)$

$(x-4)^2=2y-2$

$(x-4)^2+2=2y$

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

V(4,1) opens up




⑨ $2x^2+y^2-33=0$

$3x+y-11=0$

$y=-3x+11$

$2x^2+(-3x+11)^2-33=0$

$2x^2+9x^2-66x+121-33=0$

$11x^2-66x+88=0$

$11(x^2-6x+8)=0$

$11(x-4)(x-2)=0$

$x=4 \quad x=2$

$y=-3(4)+11=-12+11=-1$ $\boxed{(4,-1)}$

$y=-3(2)+11=5$ $\boxed{(2,5)}$

⑩
a) ELLIPSE
b) Hyperbola
c) Circle
d) Rectangular hyperbola
e) parabola
f) ellipse
g) parabola
h) hyperbola