

Name: _____

Clear everything from your desk except this exam, a pencil, and a calculator.

Do not open this exam until given permission.

Please read through each problem carefully and show all work. No work receives no credit.

Each question will be worth 2 points. The first problem and the word problem will be worth 4.

Do not spend a majority of the exam on one problem, try to finish the problems you know first.

You will have 50 minutes to complete this exam of 20 questions. Good luck.

2	3	4	5	Total
20	8	8	8	44

1. List the 4 standard equations for conic sections.

Convert into standard form

2. $4x^2 - 16x - y + 16$

6. $x^2 + y^2 - 10x + 6y + 18$

3. $x^2 + y^2 - 2x + 4y - 4$

7. $3y^2 - 24y - x + 50$

4. $x^2 + 4y^2 + 4x - 24y + 24$

8. $x^2 + y^2 + 6x - 2y - 26$

5. $2x^2 - 4y^2 - 8x - 24y - 16$

9. $-25x^2 + 36y^2 + 100x + 360y - 100$

Identify the important parts for each conic.

(parabola: focus and vertex)

(circle: center and radius)

(ellipse: center and foci)

(hyperbola: center, vertices, and foci)

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

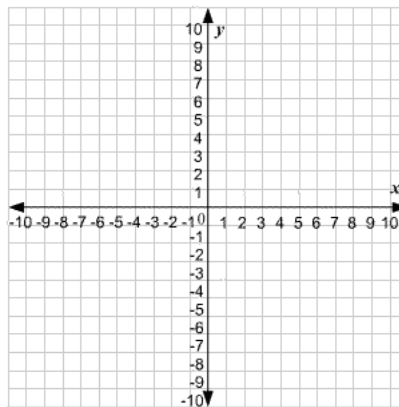
11. $(x - 2)^2 + (y + 3)^2 = 16$

12. $\frac{(x+4)^2}{25} + \frac{(y-2)^2}{16} = 1$

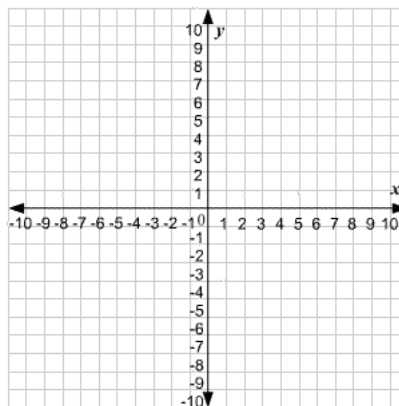
13. $\frac{(x+2)^2}{16} - \frac{(y-3)^2}{9} = 1$

Graph the equation given.

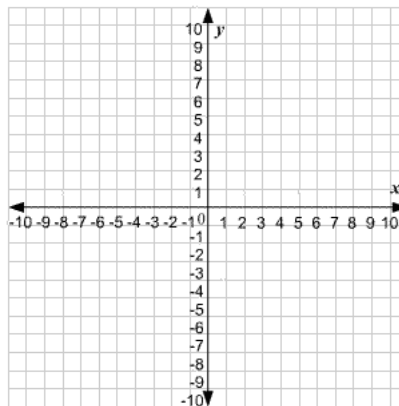
14. $y = 2(x - 1)^2 + 3$



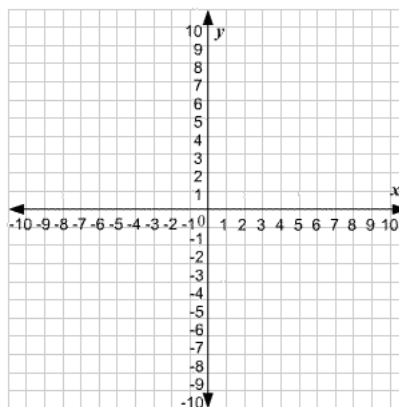
15. $(x + 3)^2 + (y + 1)^2 = 9$



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



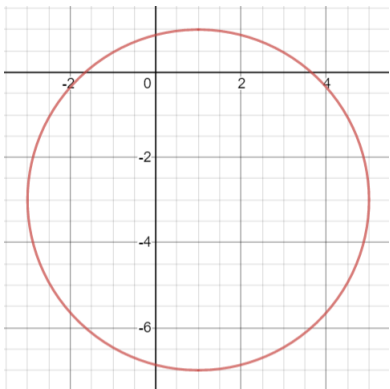
17. $\frac{(y+2)^2}{4} - \frac{(x-1)^2}{9} = 1$



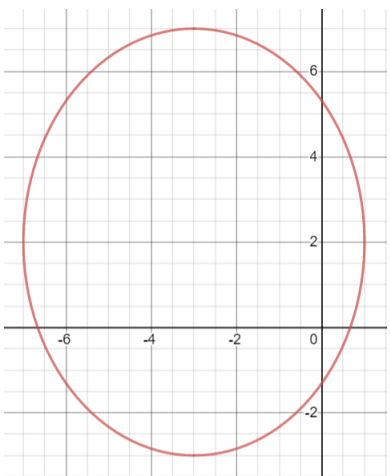
Given

the graph, what is the standard form equation?

18. with points $(1,-3)$



19. with points $(-3,2)$, $(-3,7)$, $(1,2)$



20. Word problem:

A cannon fires a projectile from ground level that travels 80m. Its peak is 20m, so what is the standard equation for the projectile's arc?