NO WORK = NO CREDIT!!!…..SHOW ALL WORK!

1. **Describe the equation (line, parabola, circle, ellipse, or hyperbola).** a) $x = (y-3)^2 + 1$ b) $2x^2 - 3y + 2y^2 + 2 = 0$ c) $3x + 2y = 6$ d) $(y-1)^2 = -3x^2 + 2$	**2—6, put in standard form.** 2. $2y = 3x^2 - 12x + 3$	3. $x^2 - 6x + y^2 + 7y - 4 = 0$
4. $12x^2 - 6y^2 = 72$	5. $3x^2 - 18x + 2y^2 + 16y + 5 = 0$	6. $y^2 - 8y - 4x^2 + 8x - 4 = 0$
In 7-11, use the given information to write the equation of the conic section in standard form. 7. parabola with a=3, vertex (-2,3), opens right.	8. circle with center (2,5) and radius =8	9. ellipse with center (-2,3) , one vertex at (-2,-1) and one co-vertex at (1,3).

10. parabola with a=5, vertex (2,4), opens down.	11. circle with endpoints of a diameter (-1,6) and (5,2).	**In 12-15, identify the following for each conic:** **Circle**: center and radius **Ellipse/hyperbola**: center, vertices and co-vertices **Parabola**: vertex, direction, axis of symmetry, "a" value, domain and range. 12. $(x-2)^2 + (y+4)^2 = 7$
13. $x = -3(y+2)^2$	14. $\dfrac{(x+5)^2}{9} - \dfrac{(y-1)^2}{16} = 1$	15. $\dfrac{(x-3)^2}{7} + \dfrac{(y+2)^2}{11} = 1$

Answers:

1. a) parabola b) circle c) line d) ellipse   2. $y + \dfrac{9}{2} = \dfrac{3}{2}(x-2)^2$ 3. $(x-3)^2 + \left(y + \dfrac{7}{2}\right)^2 = \dfrac{101}{4}$

4. $\dfrac{x^2}{6} - \dfrac{y^2}{12} = 1$ 5. $\dfrac{(x-3)^2}{18} + \dfrac{(y+4)^2}{27} = 1$ 6. $\dfrac{(y-4)^2}{16} - \dfrac{(x-1)^2}{4} = 1$ 7. $x + 2 = 3(y-3)^2$

8. $(x-2)^2 + (y-5)^2 = 64$ 9. $\dfrac{(x+2)^2}{9} + \dfrac{(y-3)^2}{16} = 1$ 10. $y - 4 = -5(x-2)^2$

11. $(x-2)^2 + (y-4)^2 = 13$ 12. $center(2,-4)\, r = \sqrt{7}$ 13. $parabola\ opens\ left,$ $aos\ y = -2,$ $vert(0,-2), a = 3,$ $D: x \le 0, R: All real\#s$

14. $hyperbola, center(-5,1)$ $vert(-2,1)(-8,1)$ $co\,vert\ (-5,5)(-5,-3)$ 15. $ellipse,\ center(3,-2)$ $vert\left(3,-2+\sqrt{11}\right)\left(3,-2-\sqrt{11}\right)$ $co\,vert\left(3+\sqrt{7},-2\right)\left(3-\sqrt{7},-2\right)$