

Alg 2B Final Exam Review Chapter 10 Fall 2017

1. Write the equation of the circle whose center is $(-8, 3)$ with radius 4.
2. a) Write the equation of the circle whose center is $(9, -5)$ and the point $(4, 7)$ is on the circle.
b) Write the equation of the circle that has a diameter with the following endpoints: $(5, -6)$ & $(13, 4)$
3. Find the coordinates of the center and the radius of this circle: $(x + 3)^2 + (y + 2)^2 = 121$
4. Write the equation of the parabola whose vertex is $(0, 0)$ and directrix is $y = -4$
5. Write the equation of the parabola whose vertex is $(0, 0)$ and focus is $(-9, 0)$
6. State the coordinates of the focus and the equation of the directrix for the parabola $x = 20y^2$
7. State the coordinates of the focus and the equation of the directrix for the parabola $y = -7x^2$
8. Write the equation of the parabola whose focus is $(4, -1)$ and vertex is $(4, 6)$
9. State the coordinates of the vertices and foci and the slopes of the asymptotes
for this hyperbola: $\frac{y^2}{25} - \frac{x^2}{81} = 1$
10. State the coordinates of the center, vertices, and foci for this hyperbola: $\frac{(x + 1)^2}{64} - \frac{(y - 3)^2}{36} = 1$
11. Write the equation of the hyperbola whose center is $(0, 0)$ and with vertices $(0, \pm 3)$ and foci $(0, \pm 7)$
12. Write the equation of the hyperbola with foci $(-1, 2)$ & $(15, 2)$ and with horizontal transverse 6 units long.
13. State the coordinates of the vertices, co-vertices, and foci of this ellipse: $\frac{x^2}{49} + \frac{y^2}{16} = 1$
14. State the coordinates of the vertices, co-vertices, and foci of this ellipse: $\frac{(x - 5)^2}{25} + \frac{(y + 8)^2}{169} = 1$
15. Write the equation of the ellipse whose center is $(0, 0)$, vertices are $(0, \pm 20)$, and minor axis is 30 units long.
16. Write the equation of the ellipse whose center is $(0, 0)$, foci are $(\pm 8, 0)$, and vertices are $(\pm 11, 0)$
17. Write the equation of the ellipse whose vertices are at $(10, 2)$ and $(-8, 2)$ and a co-vertex at $(1, 6)$

1. $(x+8)^2 + (y-3)^2 = 16$

2. (a) $(x-9)^2 + (y+5)^2 = 169$ (b) $(x-9)^2 + (y+1)^2 = 41$

3. Center $(-3, -2)$ Radius = 11

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

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

6. Focus $(\frac{1}{80}, 0)$ Directrix $x = -\frac{1}{80}$

7. Focus $(0, -\frac{1}{28})$ Directrix $y = \frac{1}{28}$

8. $y = -\frac{1}{28}(x-4)^2 + 6$

9. Vertices $(0, \pm 5)$ Foci $(0, \pm \sqrt{106})$ Asymptotes: $m = \pm \frac{5}{9}$

10. Center $(-1, 3)$ Vertices $(7, 3)$ and $(-9, 3)$ Foci $(9, 3)$ and $(-11, 3)$

11. $\frac{y^2}{9} - \frac{x^2}{40} = 1$

12. $\frac{(x-7)^2}{9} - \frac{(y-2)^2}{55} = 1$

13. Vertices $(\pm 7, 0)$ Co-vertices $(0, \pm 4)$ Foci $(\pm \sqrt{33}, 0)$

14. Center $(5, -8)$ Vertices $(5, 5)$ and $(5, -21)$ Co-vertices $(10, -8)$ and $(0, -8)$ Foci $(5, 4)$ and $(5, -20)$

15. $\frac{x^2}{225} + \frac{y^2}{400} = 1$

16. $\frac{x^2}{121} + \frac{y^2}{57} = 1$

17. $\frac{(x-1)^2}{81} + \frac{(y-2)^2}{16} = 1$