

Algebra II Chapter 10 Review

1. Find the distance and midpoint between (3, 4) and (-2, -8).
2. Write the equation of a circle with center at (-3, -1) and radius 8. Sketch a graph of it.
3. Graph and find the coordinates of the foci:

$$\text{a) } \frac{(x+2)^2}{25} + \frac{(y-3)^2}{9} = 1$$

$$\text{b) } \frac{(y-1)^2}{4} - \frac{(x+4)^2}{81} = 9$$

4. Write the equation of an ellipse with center at (-3, 1), vertices at (-1, 1) and (-5, 1) and co-vertices at (-3, 0) and (-3, 2).
5. Write the equation of a hyperbola with vertices at (-4, 0) and (4, 0) and foci at (-6, 0) and (6, 0).
6. Write the equation of a parabola that has intercepts at (3, 0) and (-7, 0) and passes through (2, 8).
7. Solve each: a) $3|x + 4| = 15$ b) $5(4^x) = 12^x$

8. Simplify: $\frac{3x}{(x+1)} + \frac{2}{x^2 + 2x + 1}$

9. Solve for x: $\frac{x}{x^2 - 6x + 8} + \frac{3}{x - 4} = 5$

Answers:

1) midpt (1/2, -2) dist = 13

2) $(x+3)^2 + (y+1)^2 = 64$

3)

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

5) $\frac{x^2}{16} - \frac{y^2}{20} = 1$

6) $y = -8/9 (x-3)(x+7)$

7) a) $x = 1, -9$ b) $x = 1.46$

8) $\frac{3x^2 + 3x + 2}{(x+1)^2}$

9) $x = 4.93$ and 1.86