

1. Find the center and radius of the circle  $9x^2 - 9x + 9y^2 + 162y + 730 = 0$ .

2. Solve  $\left| \frac{3x-6}{4} \right| - 8 \geq 12$

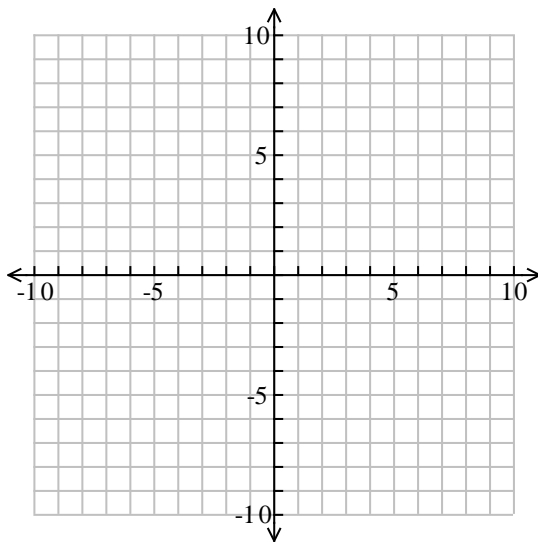
3.  $|-2i^2 - i\sqrt{25}| =$

4. Find the distance between points  $A(-2, -9)$  and  $B(4, -5)$ .

5. Solve  $2|36 - x^2| - 7 = 15$

6. 
$$\frac{7(2x+2h-4)^{-1} - 7(2x-4)^{-1}}{(x+h)-x} =$$

7. Shade the region of the coordinate plane that contains the set of ordered pairs  $\{(x, y) \mid x \geq 4, -3 < y \leq 5\}$ .



8. Solve for  $R$  in the formula  $V = \frac{\pi h(3R^2 + h^2)}{6}$

$$9. \left( \frac{-8x^{\frac{1}{5}}}{27y^{15}} \right)^{-\frac{5}{3}} =$$

$$10. \text{ Solve } 8x^{\frac{2}{3}} - 217x^{\frac{1}{3}} + 27 = 0.$$

11. Find the standard equation of the circle whose center is the midpoint of the line segment whose endpoints are  $(2, 3)$  and  $(-4, 8)$  and whose diameter is  $\frac{\sqrt{2}}{5}$ .

$$12. \text{ Solve by completing the square: } 4x^2 - 1 = x$$

13. Solve  $\sqrt{x+4} - 6 = \sqrt{x}$

14.  $\frac{8x^2 - 56x + 80}{4x^2 + 20x - 56} =$

15. Fully factor  $3x^5 + 9x^3 - 3x^2 - 9$ .

16. Solve  $\frac{x^2 - x + 79}{x + 6} > 9$

17.  $(3+6i)(\overline{4+7i}) =$

18. Solve  $-4x^2 + x - 6 = 0$

19.  $\frac{2}{\sqrt[6]{64(x-1)^2}} =$

20. What is the domain of  $\sqrt[6]{3x-9}$  ?

21. Rewrite  $|x+4|$  without using the absolute value symbol.