Solve the equation. Identify the equation as an identity, an inconsistent equation, or a conditional equation.

1. $\dfrac{1}{m-2} - \dfrac{2}{m+2} = \dfrac{4}{m^2-4}$

Solve the absolute value equation.

2. $\dfrac{1}{5}|x-13| = 20$

Solve the problem.

3.   Tim and Judy mix two kinds of feed for pedigreed dogs. They wish to make 20 pounds of feed worth $0.41 per pound by mixing one kind worth $ 0.35 per pound with another worth $0.55 per pound. How many pounds of the cheaper kind should they use in the mix? (Round to the nearest pound.)

4.   One maid can clean the house in 6 hours. Another maid can do the job in 5 hours. How long will it
          take them to do the job working together?

Graph the equation.
(Complete the square for 5 pts. Graph for 5 pts.)

5. $x^2 + y^2 + 6x + 4y + 9 = 0$
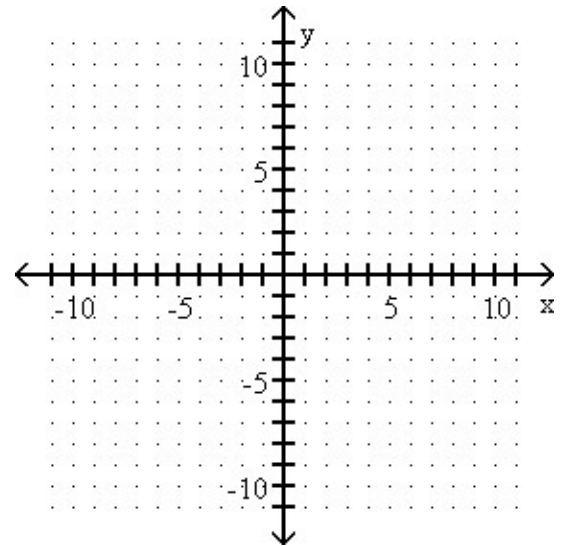
Find the equation of the line through the given pair of points.

6.   (-7, -8), (-4, 7)

(5 pts) Point-Slope Form:

(5 pts) Slope-Intercept Form:

Write an equation in standard form using only integers for the line described.

7. The line through (0, 2), perpendicular to $y = \dfrac{3}{2}x + 2$

Solve the equation by factoring.

8. $y^2 + 14y = -45$

Use the square root property to find all real or imaginary solutions to the equation.

9. $(x-8)^2 = 64$

Find the real or imaginary solutions by completing the square.

10. $x^2 + 4x + 40 = 0$

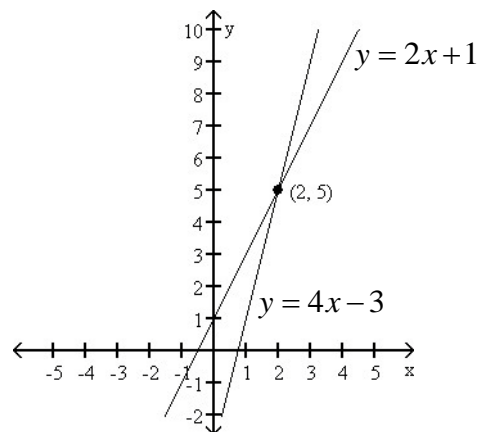**State the value of the discriminant and the number of real solutions.**

11. $5y^2 = -3y - 7$

Find the real or imaginary solutions by using the quadratic formula.

12. $3x^2 + 12x = -2$

Solve the inequality by reading the graph. Give your answer in set-builder notation AND interval notation.

13. $4x - 3 > 2x + 1$

Solve the absolute value inequality. Write the solution set using interval notation.

14. $|5x - 7| \geq 4$

15. $9|x - 8| < 3$

16. $|19x - 7| < -5$

17. $|19x - 7| > -5$

Find the values of x for which the expression is a real number.

18. $\dfrac{1}{\sqrt{13 - x}}$