

Use the discriminant to determine the number of real solutions to each equation.

1)  $2x^2 - 7x = -10$

2)  $x^2 - 4x + 8 = 4$

3)  $3x^2 + 6x + 12 = 10$

4)  $x^2 + 5x - 7 = 0$

Solve the following by quadratic formula.

5)  $x^2 - 7x + 10 = 0$

6)  $x^2 + 5x + 6 = 0$

7)  $3x^2 + 5x + 1 = 0$

8)  $x^2 + 3x - 7 = 0$

Solve the following by completing the square.

9)  $x^2 - 6x + 4 = 0$

10)  $x^2 + 4x - 2 = 0$

11)  $x^2 + 4x + 3 = 0$

12)  $x^2 + 2x - 8 = 0$

Solve the following by factoring.

13)  $6x^2 + 7x + 2 = 0$

14)  $12x^2 - 11x + 2 = 0$

15)  $3x^2 - 14x = 5$

16)  $2x^2 + 14 = 11x$

Solve the following by square root both sides.

17)  $2x^2 - 22 = 28$

18)  $2x^2 - 18 = 0$

19)  $49x^2 - 3 = 13$

20)  $4x^2 + 3 = 115$

Simplify the following.

21)  $\sqrt{44x^3y^3}$

22)  $\sqrt{56x^6y^7}$

23)  $\sqrt{169x^3y^4}$

24)  $\sqrt{72x^5y^6}$