

1. Solve for x: $3.4x - 7.8 = 4.9$
2. Solve for x: $7x^2 + 2x - 1 = 0$
3. Solve using substitution or elimination: $\begin{cases} 3x + y = 12 \\ x - y = 0 \end{cases}$
4. Solve by hand using back substitution: $\begin{cases} x + 3y - 5z = 1 \\ 2x + 6z = 0 \\ z = -1 \end{cases}$
5. Solve using CRamer's rule: $\begin{cases} 5x + 2y = 7 \\ 3x - 4y = -1 \end{cases}$
6. Multiply the matrices: $\begin{bmatrix} 2 & 4 \\ 7 & 5 \end{bmatrix} \begin{bmatrix} 0 & -5 \\ 10 & 1 \end{bmatrix}$
7. What is the distance between the points? $(3, 5)$ $(-2, 7)$
8. What is the slope of the line through the points? $(10, -3)$ $(6, 5)$
9. What is the equation of the line through the points? $(9, -2)$ $(5, 7)$
10. Suppose $g(x) = x^2 + 3x + 5$. Find $g(4)$ using the remainder theorem. (Divide using synthetic division.)
11. Construct a polynomial with roots $\{-2, 5, 0\}$
12. Solve for x: $3^{5x-2} = 81$
13. Solve for x: $x^2 - 25 \leq 0$
14. Solve for x: $|3x + 5| < 10$
15. Peanuts cost \$1.40 per pound, and cashews cost \$2.30 per pound. How many pounds of peanuts and pounds of cashews are needed to make 100 pounds of party mix costing \$1.85 per pound?
16. Calculate: $\sum_{k=1}^{23} 3 \cdot (.4)^{k-1}$
17. How many ways are there to select a committee of four from a club having 35 members?
18. Expand the binomial $(2x - 3)^4$ using the binomial theorem.
19. Expand the series: $\sum_{k=1}^5 3k^2$
20. Find the coefficient of $x^{11}y^7$ when $(x - 3y)^{18}$ is expanded.
21. A baseball player's batting average is .350 . If this player has 4 times at bat, what is the probability that this player gets 3 or more hits?