

- An ATM (Automatic Teller Machine) card holder can be given a 4-, 5-, or 6-digit code to use as personal identification. How many different codes are possible? (Digits can be repeated.)
- Use a graphing calculator to determine ${}_{15}P_8$.
- Simplify: $(9 + 9i) + (-4 - 8i)$
- Solve using the quadratic formula: $5x^2 + 7x = 1$
- Write the equation $\log_8 4 = \frac{2}{3}$ in exponential form.
- Write the equation $4^5 = 1024$ in logarithmic form.
- Evaluate: $\log_2 16$
- Write an equation in standard form for the ellipse with foci $(5, 0)$ and $(-5, 0)$ and y -intercepts of 8 and -8 .
- Sketch the graph: $\frac{x^2}{9} + \frac{y^2}{36} = 1$
- Find the foci of the ellipse with equation $100x^2 + 64y^2 = 6400$.
- Sketch the graph of $\frac{x^2}{9} - \frac{y^2}{4} = 1$.
- Graph: $9x^2 - 4y^2 = 36$
- Determine the vertices, asymptotes, and foci of the hyperbola defined by $256x^2 - 4y^2 = 16$.

Solve:

- $x^{\frac{5}{3}} = 25$
- $\log_2 (x+1) = -2$
- Simplify: $\frac{x^2 + x - 12}{3 - x}$
- Divide: $\frac{x+2}{x-2} \div \frac{x^2-4}{2-x}$
- Simplify: $\frac{x^2 - 6x - 7}{x^2 + 4x + 3} - \frac{1}{x+3}$
- Solve: $\frac{x}{x+2} - \frac{1}{3} = -\frac{2}{x+2}$
- Write an equation of the parabola with its vertex at the origin if its focus is at $(0, 5)$.
- Find the equation of the circle with center $(5, -3)$ and radius of 6.
- Change the equation to standard form and name the figure. $3x^2 - 2y^2 - 42x - 4y + 139 = 0$
- Find the center and radius of $x^2 + y^2 + 8x - 2y + 8 = 0$.
- Two number cubes are thrown. Find the probability that the sum turning up is eleven given that the first number cube shows a five.
- Use a calculator to find the 50th term of this sequence:
 $5, -2, -9, -16, \dots$
- Find the 6th term of the geometric sequence for which $a_1 = -2$ and $r = -\frac{1}{3}$.
- Find the sum of the geometric sequence:
 $40, -8, \frac{8}{5}, -\frac{8}{25}, \dots$
- There is a drawer with 8 red socks, 2 white socks, and 2 blue socks. You draw out one sock, return it, and draw out a second sock. What is the probability that the first sock is red and the second is blue?