Using \(9x^2 + 16y^2 + 18x = 64y + 71\):

Let \(A\) = the area of the ellipse.

Let \(B\) = the sum of the \(x\)-coordinates of the foci of the ellipse.

Let \(C\) = the product of the abscissa and the ordinate of the center of the ellipse.

Let \(D\) = the eccentricity of the ellipse.

Find the exact value of \(A \bullet B \bullet C \bullet D\).
Let $R = \begin{vmatrix} 10 & 3 & 2 \\ -1 & 4 & 0 \\ 7 & -1 & 5 \end{vmatrix}$.

Let $S =$ The factor by which the determinant of the matrix shown above will be multiplied if the elements in the first column are multiplied by 2.

Let $T =$ the greatest integer such that $8^T$ is an integral factor of $44^{44}$.

In triangle $ABC$, a median divides the triangle into two triangles of equal perimeter. The length of the median is 21 and the length of the side to which the median is drawn is 56. Let $U$ be the perimeter of triangle $ABC$.

Find $R + S + T + U$. 
Let \((A, B)\) be the solution to
\[
\begin{align*}
\frac{A + 3}{4} + \frac{B - 1}{3} &= 1, \\
2A - B &= 12
\end{align*}
\]

Let \((C, D)\) be the solution to
\[
\begin{align*}
\frac{12}{C} - \frac{12}{D} &= 7, \\
\frac{3}{C} + \frac{4}{D} &= 0
\end{align*}
\]

Let \(E\) be the degree measure of the smallest possible positive angle for which
\[
\sin x \cos E + \cos x \sin E = \frac{\sqrt{3}}{2}, \text{ if } x = 22^\circ.
\]

Find \(A \cdot B \cdot C \cdot D \cdot E\).
Let \( A \) = the degree of the polynomial \((x^3 + 1)^4(x^4 + 1)^5\).

Let \( B \) = the base 7 representation of 298.

Let \( C \) = the twelfth term of an arithmetic sequence whose sixth term is 20 and whose tenth term is 320.

Let \( D = \begin{vmatrix} 7P_3 & 0 & 0 & 0 \\ 0 & \frac{1}{6!} & 0 & 0 \\ 0 & 0 & 4C_2 & 0 \\ 0 & 0 & 0 & 4P_2 \end{vmatrix} \).

Find \( B - A - C - D \).
Let $A$ = the product of $m$ and $n$, if $(3x^3 + mx^2 - 5x + n)$ is divisible by both $(x - 2)$ and $(x + 1)$.

Let $B = (-1 + i)^{-4}$.

Let $C =$ the length of $EF$ if $MN$ is a median in trapezoid $ABCD$ where $DC = 8$ and $AB = 20$. The figure is not drawn to scale.

Let $D = a + b + c$ if the graph of $y = \frac{ax + b}{x - c}$ has $y$-intercept 1, vertical asymptote at 4, and horizontal asymptote at 2.

Find $A \cdot B \cdot C \cdot D$.

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Find $A \cdot B \cdot C \cdot D$.
Let \( A \) = the value of \( \frac{\log_3 4 + \log_3 8 + \log_3 16 + \log_3 32}{\log_3 2} \).

Let \( B \) = the area of a quadrilateral inscribed in a circle if the sides of the quadrilateral measure 1, 5, 9, and 11. Find \( B^2 \).

Find \( C \), if \( \sqrt{0.005} \) is \( C \% \) of \( \sqrt{2} \).

Let \( D \) = the number of distinct integers that are in the solution set of \( \frac{1}{3} \leq \frac{x}{2007} \leq \frac{4}{9} \).

Find the largest digit from your answers to \( A, B^2, C \), and \( D \).
In the complete factorization of \( x^7 + 125x^4 - x^3 - 125 \) using only integral coefficients, the number of factors which are linear polynomials is \( A \). Find \( A \).

Find \( B \) if \( 4^B - 4^{B-1} = 24 \).

Let \( C \) be the least integer such that \( \log_5 |3x + 7| \leq 0 \). Find \( A \cdot B \cdot C \).
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$A = \text{the number of positive perfect squares will evenly divide 8400?}$

In the partial fraction decomposition for $\frac{x + 7}{x^2 - x - 6}$, the partial fractions are $\frac{B}{x - 3} + \frac{C}{x + 2}$. Find $B$ and $C$.  

Find $A \div B \div C$.
Let $A = \text{the distance from (3, 17) to the intersection of } y = 3x^2 - 2x + 5 \text{ and } y = 4x + 2$. Find $A^2$.

Let $B = ab$, if $a^2 + b^2 = 181$ and $a + b = 19$.

Let $C = \text{the number of ordered triples of positive integers (} x, y, z \text{) that satisfy } (x^y)^z = 64$.

Find the sum of the units digits of the answers to $A^2, B, \text{ and } C$. 
Let \( \frac{A}{B} = \lim_{x \to 1} \frac{\sqrt[3]{x} - 1}{x - 1} \), where \( A \) and \( B \) are relatively prime integers.

The area of triangle \( PET \) is 84 square inches and the geometric mean between sides \( \overline{PE} \) and \( \overline{PT} \) is 16 inches. Let \( \frac{C}{D} = \sin P \), where \( C \) and \( D \) are relatively prime integers.

Find the sum of the digits in the answers to \( A, B, C, \) and \( D \).
Let $A = \left[ \cos x \right]$, where $\log_{\cos x} \sin x = \frac{1}{2}$, and $0^\circ \leq x < 90^\circ$ and $\left[ \right]$ denotes the greatest integer function.

Let $B$ = the numerical value of $k$, where the roots of $9x^2 - 2x + k = 0$ are $\sin u$ and $\cos u$.

Find $A + B$. 

Let $A = \left[ \cos x \right]$, where $\log_{\cos x} \sin x = \frac{1}{2}$, and $0^\circ \leq x < 90^\circ$ and $\left[ \right]$ denotes the greatest integer function.

Let $B$ = the numerical value of $k$, where the roots of $9x^2 - 2x + k = 0$ are $\sin u$ and $\cos u$.

Find $A + B$. 
Let $A =$ the integer closest to $e + \pi$.

Let $B =$ the number of zeros at the end of $40!$.

Let $C =$ twice the number of distinct real roots of $x^3 + x - 8 = \frac{8}{x^2}$.

Let $D =$ the length of $\overline{OT}$, to the nearest whole number, in the rectangle shown:

Find the mode of the set $\{A, B, C, D\}$
A disoriented armadillo moves north, east, south, and west and repeats this movement continuously. It travels north 180 meters, and each subsequent move is one-third the distance of the previous move. If the armadillo’s starting point is (20, 7), what is its final point of destination, (A, B)?

Let C be the solution to the equation \( x^{\log x} = 100x \), where \( x > 0 \), with the largest absolute value.

Find \( \frac{B - A}{C} \), written as a percent.
Let $A = x^2$ if $x = \sqrt{7 + 2\sqrt{6}} - \sqrt{7 - 2\sqrt{6}}$.

Let $B$ be the smallest natural number such that $B!$ is evenly divisible by 990.

Find $A + B$.
Let $A$ = the smaller of two positive numbers, neither of which has 0 as a digit, that multiply to give 1,000,000,000.

Let $B$ = the square number such that $B + 43$ is in the set \{1, 4, 9, 16, 25, ...\}.

Let $C$ = the number of distinct arrangements of all the letters in the word $TAMPA$.

Find $A + B + C - 1$.