Given $f(x) = 3x^2 - 14x - 24$

Let A = the sum of the zeros of $f(x)$

Let B = the product of the zeros of $f(x)$

What is the value of 6A – B?

$$\begin{bmatrix} 2 & -1 \\ 3 & 5 \end{bmatrix}\begin{bmatrix} 6 & 8 \\ -4 & -7 \end{bmatrix} = A$$

If $A^{-1} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, then what is the value of c ?

A regular pentagon has an area of K square units and a perimeter of K units. What is the length of the apothem of the pentagon?

Evaluate:

$$\left[\left(\log_{9}\frac{1}{49}\right)\left(\log_{4}11\right)\left(\log_{7}32\right)\right]$$

3

Find the sum of all solutions such that $0 \le x < 2\pi$:

$$2\sin 2x - 4\sin x + 2\cos x - 2 = 0$$

If $x(t) = 2t - 1$ and $y(t) = t^2 + 1$, then what is the positive real value a so that $x(a) + y(a) = 9800$?

A hyperbola has equation $\frac{(x-1)^2}{7}-\frac{(y-3)^2}{2}=1$

Let A = the distance between the vertices

Let B = the distance between the foci

Let C = the product of the slopes of the asymptotes

What is the value of $\frac{CA^2}{B}$?

Let A = $\lim_{x \to 5} \frac{x^2 - 25}{x - 5}$ and let B = $\lim_{x \to 2} \frac{x^3 - 8}{x - 2}$.

What is the value of AB?

Given two vectors **u** and **v** such that **u** = 3**i** + **j** + 4**k** and **v** = 2**i** + 7**j** + **k**. If **u** x **v** = A**i** + B**j** + C**k**, then what is the value of $A + 2^B - C$?

Evaluate $2+\frac{6}{5}+\frac{4}{7}+\frac{7}{25}+\frac{8}{49}+\frac{8}{125}+\frac{16}{343}+\frac{9}{625}+...$

Given $f(x) = 3x^5 - 12x^3 + 9x^2 - 7x + 2008$

What is the value of $f(1) + f'(1) f''(1)$?

A red six-sided die and a blue eight-sided die are sitting on a table. The red die is "loaded" so that any even number is twice as likely to come up as any odd number. If the dice are rolled at the same time, what is the probability that the sum of the numbers showing on the tops of the dice is 10?