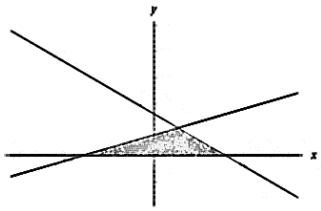
Find the area of the region bounded by the graphs: $y \geq 0$, $y = x + 8$, and $y = -2x + 16$ *(Disregard units)*



The region is depicted in the image

Find $\boldsymbol{A + B + C + D}$

Note: A remainder of $\frac{R}{(x+p)}$ *will be written as remainder R for each part*

A. Find the remainder when $x^3 - 3x + 5$ is divided by $(x + 2)$

B. Find the remainder when $x^2 - 2x + 7$ is divided by $(x + 2)$

C. Find the remainder when $x^3 - 6$ is divided by $(x - 1)$

D. Fid the remainder when $x^3 + 3x^2 - 16$ is divided by $(x - 1)$

$$\begin{cases} a+b+d=4 \\ 2a+2c+3d=5 \\ c-b-d=-6 \\ 3a+3b+2c+d=-2 \end{cases}$$

What is the value of $(a+b-c-d)$?

Find $\boldsymbol{A(B+C+D)}$

A. Find the length of the transverse axis of the conic: $2y^2 - 3x^2 + 4y - 6x = 7$

B. Find the length of the minor axis of the conic: $x^2 + 2y^2 - 10x + 24y = 1$

C. Find the distance between the foci of the conic: $4x^2 - 3y^2 + 16x - 30y = -25$

D. The points $(3, S)$ and $(-1, Q)$ are points on the graph of the conic: $3x^2 - 6x - 2y^2 + 8y + 1 = 0$. Given S and Q are positive integers, what is the value of $(S + Q)$?

$$\frac{8}{4+\sqrt{32}} - \frac{4}{2+\sqrt{12}} - \frac{3}{3+\sqrt{18}} = C\sqrt{A} + D\sqrt{B}$$

If $C\sqrt{A} + D\sqrt{B}$ is in reduced radical form, what is the value of $(A + B + C + D)$, where $A > B$?

Find $\boldsymbol{A + B + C + D}$

A. Compute: $16^{\log_2 3}$

B. Compute: $(\log_4 81)(\log_3 64)$

C. Compute: $\log(20) + \log(50)$

D. Find the sum of the distinct values of x: $\log(x^2 + 5x + 4) = 1$

Find $\boldsymbol{A + B + C + D}$

A. The cubic polynomial $g(x)$ has three real zeroes $x = -5$, $x = 1$, and $x = m$. If $g(3) = 12$ and the leading coefficient of $g(x)$ is one, what is the value of m?

B. Find the minimum value of the function: $f(x) = x^2 + 2x - 6$

C. Find the number of multiples of 14 between 102 and 314

D. Solve for x: $3^x + 3^x + 3^x + 3^x + 3^x = 135$

Find $\boldsymbol{AD + B + C}$

$$M = \begin{bmatrix} 5 & 6 \\ -3 & -4 \end{bmatrix} \qquad N = \begin{bmatrix} 9 & -5 \\ 6 & -4 \end{bmatrix}$$

A. Find the sum of the entries in Matrix MN

B. Find the sum of the entries in Matrix NM

C. Find the sum of the entries in M^{-1}, or otherwise the inverse of Matrix M

D. Find the sum of the entries in N^{-1}, or otherwise the inverse of Matrix N

Find $\boldsymbol{A + B + C + D}$

A. Evaluate: $\sum_{n=1}^{8}\left[n(i)^{n-1} \right]$

B. Compute: $\left({}^{1}/_{i}\right)^{2020}$

C. Compute: $(3 - 2i)^2$

D. Simplify: $\frac{16+2i}{3+i}$

Find $\boldsymbol{A + B + C + D}$

$$f(x) = \frac{x^3 + x + 2}{x^2 - 1} \qquad g(x) = \frac{x}{x^2 + 4} \qquad h(x) = \frac{1}{x + 2}$$

A. Evaluate: $h^{-1}(5)$

B. Solve for x over reals: $g(x) = h(x)$

C. Find the number of vertical asymptotes for the graph of $f(x)$

D. The equation of the slant asymptote for $f(x)$ is $y = mx + n$. What is the value of $(m + n)$?

Consider the graph of $4x + 3y^2 = 12y - 6$. The equation of the directrix is $x = A$. The coordinates of the focus are (B, C). The coordinates of the x-intercept are $(D, 0)$.What is the value of $(A + B + C + D)$?

Find the sum of the integer solutions to the inequality: $|x^2 - 10x| < 24$

Find $(\boldsymbol{A}+\boldsymbol{C})\boldsymbol{BD}$ *(in reduced radical form)*

A. Find the maximum value of the function, where domain is the interval $[-1,1]$: $h(x)=\frac{8}{x^2-x-6}$

B. Evaluate: $5^{\log_{25} 125}$

C. Solve for x: $(4x+1)^5=32$

D. Find the circumference of the circle: $x^2+(y+3)^2=20$

$$\frac{5x^2 - 6x + 7}{x^3 - 2x^2 - x + 2} = \frac{A}{x - 1} + \frac{B}{x - 2} + \frac{C}{x + 1}$$

What is the value of $(A + B - C)$?

Find $\boldsymbol{A + BC}$

A. Find the closest integer to the value of $\left(\sqrt{12} + \sqrt{48}\right)^2$

B. Solve for x: $32^x = \frac{1}{256}$

C. Find the units digit of $2^{23} + 3^{31}$