

$$\frac{1}{5} + \frac{3}{8}A = \frac{3}{4}$$

$$-\frac{1}{5}(D - 2) = \frac{4}{3}$$

$$0.9B - 0.7 = 4.2$$

$$24\left(\frac{C}{6} - \frac{1}{3}\right) = C - 24$$

Find A+B+C+D

ALGEBRA 2 TEAM QUESTION 2 FEBRUARY 9, 1991

- A = Slope of line parallel to the line $2x+y-10=0$.
 - B = Slope of line perpendicular to the line $5y-4x-10=0$
 - C = Y intercept of line parallel to the line $2y+8x=6$ containing the point $(-2,-4)$
 - D = Y intercept of line perpendicular to the line $2x+y=-3$ containing the point $(2,5)$
- Find A+B+C+D

ALGEBRA 2 TEAM QUESTION 3 FEBRUARY 9, 1991

Solve:

$$\frac{x+1}{x^2-5x+6} + \frac{x+2}{x^2-7x+12} = \frac{6}{x^2-6x+8}$$

ALGEBRA 2 TEAM QUESTION 4 FEBRUARY 9, 1991

- A = Remainder of $(2x^3+7x^2-5) \div (x+3)$
 - B = $P(x) = 2x^2+ix-1$. Find $P(1)$ where $i = \sqrt{-1}$
 - C = Value of constant term of polynomial of degree 3 that has $-1, 2$, and 5 as roots.
- AB + C

ALGEBRA 2 TEAM QUESTION 5 FEBRUARY 9, 1991

Suppose q_1 and q_2 are roots of the equation $ax^2+bx+c=0$. Find the value of $\frac{q_1^2+q_2^2}{q_1q_2}$ in terms of a, b, and c.

ALGEBRA 2 TEAM QUESTION 6 FEBRUARY 9, 1991

If $A = \begin{bmatrix} 3 & 4 \\ 7 & 9 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 4 \\ -8 & 9 \end{bmatrix}$

Find $AB + BA^{-1}$

ALGEBRA 2 TEAM QUESTION 7 FEBRUARY 9, 1991

Solve the equations:

$$\sqrt{11-A} - \sqrt{A+6} = 3$$

$$\sqrt{3+7} + B = 13$$

$$\sqrt{C+2} + 4 = C$$

$$3\sqrt{D} + 4 = D$$

Find $\frac{AB}{CD}$

ALGEBRA 2 TEAM QUESTION 8 FEBRUARY 9, 1991

- A = Sum of coefficients $(2x+iy)^4$
 - B = Units digit of 3147^{25}
- Find $3A - 2B$

ALGEBRA 2 TEAM QUESTION 9

FEBRUARY 9, 1991

$$A = 12z$$

$$B = \frac{3+i}{2-i}$$

$$C = -1 - \sqrt{-144}$$

$$D = (4+i)^2$$

Find $A+B+C+D$

ALGEBRA 2 TEAM QUESTION 10

FEBRUARY 9, 1991

$$\frac{2}{x} - \frac{1}{y} - \frac{2}{z} = -1$$

$$\frac{2}{x} - \frac{1}{y} + \frac{1}{z} = -9$$

$$\frac{1}{x} + \frac{2}{y} - \frac{4}{z} = 17$$

Solve for (x, y, z)

ALGEBRA 2 TEAM QUESTION 11

FEBRUARY 9, 1991

$$A = \log_4(8\sqrt{32})$$

$$B = \log_2(\log_2(\log_2(\log_2(16))))$$

$$C = \log_{\frac{64}{81}} = 3C$$

$$D = \log(D^2-4) - \log(D+2) = \log 4$$

Find $\frac{AB}{DC}$

ALGEBRA 2 TEAM QUESTION 12

FEBRUARY 9, 1991

$$A = \sqrt{2 + \sqrt{2 + \sqrt{2 + \dots}}}$$

$$B = \sqrt{2 - \sqrt{2 - \sqrt{2 - \dots}}}$$

Find $2A + 3B$

ALGEBRA 2 TEAM QUESTION 13

FEBRUARY 9, 1991

Solve for x :

$$\frac{x-5}{x+3} = 5$$

ALGEBRA 2 TEAM QUESTION 14

FEBRUARY 9, 1991

$$2x - y - 2z = 4$$

$$x + 3y - z = -1$$

$$x + 2y + 3z = 5$$

Find $x+y+z$

ALGEBRA 2 TEAM QUESTION 15

FEBRUARY 9, 1991

Find all the roots of the equation: $x^4 - x^3 + 2x^2 - 4x - 8 = 0$