

## Algebra I Team Question # 1

January 11, 1992

Let  $A = 48 + 53 + 52 + 47$

$B = (7 \times 10^3) + (6 \times 10^2) + (5 \times 10^1) + 4 \times 10^0$

$C = (12 \times 24) + (24 \times 8) + (24 \times 20)$

$D = (1010 + 10100) + 1$

Find  $A + B + C + D$ .

## Algebra I Team Question # 2

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Solve for  $x$ :  $\frac{1}{4}(3x + 8) - \frac{1}{3}(5x - 7) < 0$

## Algebra I Team Question # 3

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Solve each equation for  $x$ .

$3x - 8 = -6x + 1$

$2(x + 3) = -4x + 3$

$-2 + 2(x - 1) = 3(2x + 4)$

$3x + 4(3x - 7) = 5 - 3(x - 1)$

Find the average of these four solutions.

## Algebra I Team Question # 4

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Solve for  $x$  and  $y$ . Express your answer as an ordered pair.

$$\frac{x-1}{4} + \frac{y-1}{4} = 3 \quad , \quad \frac{x-1}{3} + \frac{y-1}{12} = \frac{5}{4}$$

## Algebra I Team Question # 5

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Let  $A = \{ \text{the slope of } 3x + 2y = 9 \}$

$B = \{ \text{the } y\text{-intercept of } 5x - 3y = 9 \}$

$C = \{ \text{the } x\text{-intercept of } 4x - y = -10 \}$

Find the value of  $\frac{4A + B}{C}$

Algebra I Team Question # 6

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Evaluate the expression for  $x = -2$ .

$$\frac{3x^2 - 10x - 8}{2x + 2} \cdot \frac{x^2 + 5x + 4}{x^2 - 16}$$

Algebra I Team Question # 7

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Find the value of A so that the solution to the equation  $2x - 9A + 6 = 4x$  is two greater than the solution of  $3y - 4(2y - 1) = 16$ .

Algebra I Team Question # 8

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Find the integer(s) that is(are) a solution of  $-2x + 1 > -6 + 3x$   
 and  $-y + 6 > 3 - 4y$   
 and  $|3z - 2| = 1$

Algebra I Team Question # 9

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Evaluate each of the following expressions, then find the sum of the values.

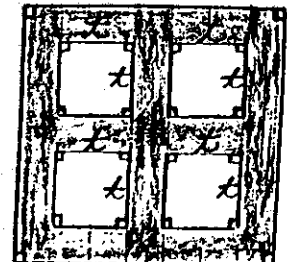
$$a = -2, b = 3, c = -1$$

- |                         |                      |
|-------------------------|----------------------|
| 1) $7a - (2b + c)$      | 3) $c^{3-a} + b^2$   |
| 2) $\frac{4(b-a)}{c-1}$ | 4) $(5b - 2c) - c^2$ |

Algebra I Team Question # 10

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Express the area of the shaded region in factored form.



Algebra I Team Question # 11

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A rectangle is 10 cm by 13 cm. If each dimension is increased by the same amount, find the dimensions of a new rectangle whose area is 50 cm<sup>2</sup> more than the original rectangle.

Algebra I Team Question # 12

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The sum of two fractions is  $\frac{25}{27}$  and one of them is  $\frac{2}{3}$  of the other. Find the product of the two fractions.

Algebra I Team Question # 13

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Two trains leave MAΘ station and travel in opposite directions. After 11 hours they are 1265 miles apart. The rate of one train is 15mph greater than the other. Find both rates in mph.

Algebra I Team Question # 14

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Solve for x:

$$\frac{x + 8}{16} - 1 > \frac{4 - x}{12}$$

Algebra I Team Question # 15

January 11, 1992

Solve for b in terms of A, h, and d.

$$A = \frac{h}{2} (b + d)$$