

6
TEAM QUESTION 1 ALGEBRA I PCHS INVITATIONAL 2/22/92

EXPRESS $.2\overline{5}$ AS A FRACTION IN LOWEST TERMS.

TEAM QUESTION 2 ALGEBRA I PCHS INVITATIONAL 2/22/92

Given a , b , and c are the solutions of the equation

$$x^3 - 2x^2 - 5x + 6 = 0. \text{ Find } a^2b^2c + ab^2c^2 + a^2bc^2.$$

TEAM QUESTION 3 ALGEBRA I PCHS INVITATIONAL 2/22/92

SIMPLIFY:

$$3 - 9 \div 3^3 (2^4 - 23 \div 2) + 8 \div \frac{1}{4} - 24 \div \frac{8}{7}$$

TEAM QUESTION 4 ALGEBRA I PCHS INVITATIONAL 2/22/92

A PERSON TAKES 5 HOURS TO ROW A CERTAIN DISTANCE UPSTREAM, WHILE IT TAKES ONLY HALF THE TIME TO ROW THE SAME DISTANCE DOWNSTREAM. IF THE CURRENT IS 4 MPH, HOW LONG WILL IT TAKE THAT SAME PERSON TO ROW THE SAME DISTANCE IN STILL WATER?

TEAM QUESTION 5 ALGEBRA I PCHS INVITATIONAL 2/22/92

THREE SUBTRACTED FROM THREE TIMES THE TEN'S DIGIT IS DIGIT IS EQUAL TO THE UNITS DIGIT. IF THE SUM OF THE TWO DIGITS IS THIRTEEN, WHAT IS THE NUMBER?

TEAM QUESTION 6 ALGEBRA I PCHS INVITATIONAL 2/22/92

$$\text{Find } 2x \text{ if } 4(2x - 5) = 64(x-3)$$

TEAM QUESTION 7 ALGEBRA I PCHS INVITATIONAL 2/22/92

JOHN CAN MOW THE LAWN IN 4 HOURS WHILE TERI TAKES 5 HOURS TO FINISH THE JOB. IF TERI HELPS JOHN AFTER JOHN HAD BEEN MOWING FOR 1 HOUR, WHAT IS THE TOTAL AMOUNT OF TIME IT WILL TAKE TO MOW THE LAWN?

TEAM QUESTION 8 ALGEBRA I PCHS INVITATIONAL 2/22/92

FIND THE Y INTERCEPT OF THE LINE THAT IS THE PERPENDICULAR BISECTOR OF THE SEGMENT WHOSE ENDPOINTS ARE (1,5) AND (-2,-3).

IN THREE YEARS, AARON WILL BE ONE MORE THAN THREE TIMES NINA'S AGE NOW. IN FIVE YEARS, NINA WILL BE THREE LESS THAN AARON'S AGE NOW. FIND THE SUM OF THEIR CURRENT AGES.

TEAM QUESTION 10

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SIMPLIFY:

$$\frac{2(x^2 - 2x - 15)}{x^2(x^2 + x - 6)} \div \frac{3x^2 - 13x - 10}{(-x^3 + 4x^2 - 4x)}$$

TEAM QUESTION 11

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HOW MANY QUARTS OF A 25% ANTIFREEZE SOLUTION MUST BE DRAINED AND REPLACED BY A 75% ANTIFREEZE SOLUTION TO MAKE A 45% ANTIFREEZE SOLUTION IN A 13 PINT RADIATOR?

TEAM QUESTION 12

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EVALUATE AT $x = \frac{7}{2}$:

$$\frac{\frac{x-2}{x} - 3}{\frac{6}{x}} - \frac{x-1 + \frac{1}{x}}{\frac{3}{4x}} - 2x$$

TEAM QUESTION 13

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FIND k SUCH THAT $2x^4 - 3x^2 - 5x - 10k$ IS DIVISIBLE BY $x+3$.

TEAM QUESTION 14

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SOLVE FOR r : $\frac{ar + xr - ax}{2r} = \frac{x + 8}{2}$

TEAM QUESTION 15

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FIND THE LCM OF 18, 45, AND 28.