2006 Hoover HS Math Tournament
Pre Algebra Ciphering

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| $2.156 \times 10^4$ | 1-1 | Express in scientific notation: $2.394 \times 10^4 - 2.394 \times 10^3$ |
| $x = 0$ | 1-2 | Solve for x: $\frac{1-x}{1+x} = \frac{1+x}{1-x}$ |
| $5\sqrt{2}$ | 1-3 | Find the arithmetic mean of: $\sqrt{2}$ and $9\sqrt{2}$ |
| 1/900 | 1-4 | Express $.00\overline{1}$ as a fraction in lowest terms. |
| 10 | 1-5 | A square and a circle have the same area. Find the diameter of the circle if the area of the square is $25\pi$. |
| 25 | 2-1 | How many square units is the area of the triangle created by the x-axis, y-axis and line $y = -2x + 10$. |
| 17 | 2-2 | Evaluate : $\frac{256}{16} - \frac{289}{17} + \frac{324}{18}$ |
| 13 | 2-3 | Point A ( 3 , 8 ) is translated 5 units up and 12 units left. How many units is the resulting new point A' from the original point A? |
| 365 | 2-4 | 450 students attend Steele Middle School. 30 of the students play soccer. 62 of the students play football. 7 of the students play both soccer and football. How many of the students play neither soccer or football? |
| 121 | 2-5 | Evaluate: $\frac{6! + 3!}{3!}$ |
| 28/121 | 3-1 | Find the probability of randomly selecting a vowel and then a consonant with replacement from the word MATHEMATICS. |
| $6 \times 10^{10}$ | 3-2 | Write in scientific notation the number of nanoseconds that are in a minute? |
| 2 | 3-3 | Bob and Sue start running from the same place at the same time. Bob runs due north at 3mph and Sue runs due west at 4mph, how many hours will it take for them to be 10 miles away from each other? |
| 0 | 3-4 | Evaluate: $4 - 4 \cdot (20 - 20) \cdot 4 - 4$ |
| 1/40 | 3-5 | The sum of 5 and the reciprocal of a number is 45. Find the number. |
| II | 4-1 | The end points of a diameter of a circle are ( 4 , 6 ) and ( -6 , -4 ). The center of the circle is in what quadrant? |

6 4-2 If $A + 3B = 16$
and $B + 3A = 8$

find $A + B =$

20 4-3 Find the sum of the positive single digit factors of 35120.

¼ 4-4 Evaluate: $\sqrt{\frac{2 \cdot 2 \cdot 2 \cdot 2}{4 \cdot 4 \cdot 4 \cdot 4}}$

20 4-5 The "square average" of a group of numbers is the average of their squares. What is the square average of the first seven positive integers?