## 2010 VHHS Math Tournament <br> Mental Math <br> Sixth Grade

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SCHOOL
(Do not abbreviate your school name.)

## Directions: You have $\mathbf{1 5}$ minutes to do $\mathbf{5 0}$ problems. Write answers to the left of the problem.

$\qquad$ 1. Compute $155+178$
$\qquad$ 2. Compute $155-178$.
$\qquad$ 3. Compute $14 \times 14$.
$\qquad$ 4. Compute $253 \div 23$.
$\qquad$ 5. Compute $2^{6}$.

$\qquad$ 6. Compute $(19-7 \times 3)^{4}$.
$\qquad$ 7. Compute $10+3 \times 6-4^{2}+12$.
$\qquad$ 8. Find the value of $x$ if $\frac{3}{4}=\frac{18}{x}$.
$\qquad$ 9. Find the value of $x$ if $\frac{6}{5}=\frac{x}{20}$.
$\qquad$ 10. Find the value(s) of $x$ for which $x^{2}=36$.
$\qquad$ 11. Find the perimeter of a square whose area is 81 square units.
$\qquad$ 12. The area of a triangle is 21 square units. If it has a base of 3 units, find its height.
$\qquad$ 13. Evaluate $|x-5|$ when $x=2$.
$\qquad$ 14. Evaluate $|3 x-24+x|$ where $x=4$.
$\qquad$ 15. Find the probability of rolling an even number on a single die.
$\qquad$ 16. Find the probability of getting two heads when flipping two fair coins.
$\qquad$ 17. Find $b$ if $a=4, c=9$, and $a \bullet b+c=25$.
$\qquad$ 18. Compute $\frac{6^{2}}{3}+5$.
$\qquad$ 19. Farmer Ted has 50 chickens and 50 cows in his barn. Assuming no malformations, how many total legs does he have in his barn? (Do not count Farmer Ted's legs!)
$\qquad$ 20. A rectangular fence has length 6 and width 9 . Find its perimeter.
$\qquad$ 21. A rectangular fence has length 7 and width 13 . Find its area.
$\qquad$ 22. The answer is half the correct answer to \#35.
$\qquad$ 23. A magic number machine takes whatever number you put in, adds 4 , and then multiples the result by 2 . If your final number is 50 , what number did you put in?
$\qquad$ 24. If $5!=5 \times 4 \times 3 \times 2 \times 1$ and $4!=4 \times 3 \times 2 \times 1$, find 3 !.
$\qquad$ 25. List the prime numbers less than 10 .
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$\qquad$ 26. Compute $55+67+40$.
$\qquad$ 27. Compute $55+67-40$.
$\qquad$ 28. Compute $9 \times 8$.
$\qquad$ 29. Compute $\frac{(15-8)^{2}}{7}$.
$\qquad$ 30. Compute $|8-13|$.
$\qquad$ 31. Compute $19 \times 3$.
$\qquad$ 32. Compute $(10+2 \times 3-5)^{2}$.
$\qquad$ 33. Find the square of the answer in \#13.
$\qquad$ 34. A man is running 6 mph . How long does it take him to run 15 miles?
$\qquad$ 35. The average of $x$ and 90 is 88 . Find the value of $x$.
$\qquad$ 36. Find the sum of the prime numbers less than 10 .
$\qquad$ 37. The answer is half the answer to \#19.
$\qquad$ 38. A right triangle has legs of length 4 and 8. Find its area.
$\qquad$ 39. Compute $\frac{(9+9)}{9}$.
$\qquad$ 40. Compute $(9+9+9) \times 9 \times\left(\frac{9}{9}+9-10\right)$.
$\qquad$ 41. Find the average (arithmetic mean) of $1,2,3,4,5,6,7$.
$\qquad$ 42. Find the range of $9,5,7,11,4,7,10,6,14,5,8$
$\qquad$ 43. Find the mode of the list in \#42.
$\qquad$ 44. Compute $\frac{8 \times 7 \times 6}{3 \times 2 \times 1}$.
$\qquad$ 45. Find the sum of the answers from \#2, \#7, \#30, and \#40.
$\qquad$ 46. Divide the sum of your answers from \#8 and \#9 by the answer to \#7.
$\qquad$ 47. Find the square root of the answer to \#32 and multiply it by 9 .
$\qquad$ 48. Multiple the answers to \#4, \#13, \#30, and \#40.
$\qquad$ 49. Add the answers to \#45, \#46, \#47, \#48.
$\qquad$ 50. The answer is $A$.
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