

## Problems of the Week # 5

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Circle the one best answer. Justify your answer by showing all work below.

21. Find the slope of a line that is perpendicular to the line whose equation is:  $5x + 2y = 8$

- A.  $-\frac{5}{2}$       B.  $-\frac{1}{5}$       C.  $\frac{2}{5}$       D.  $\frac{5}{2}$       E. 4

22. What kind of function would best model the data below, where  $x$  is the independent variable and  $y$  is the dependent variable?

$x$	-3	-2	-1	0	1	2	3	4
$y$	8	4	2	1	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$

- A. quadratic      B. absolute value      C. exponential      D. linear      E. rational

23. A small math class has six students. The class average on a test has to be greater than 80 in order for the class to receive a prize from the teacher. What is the lowest grade the 6<sup>th</sup> student may score in order for the average to be greater than 80? The other five scores are:  $\{66, 70, 80, 84, 95\}$ .

- A. 79      B. 80      C. 85      D. 86      E. 100

24. What is the equation of the axis of symmetry of the graph of the equation  $y = -x^2 + 6x + 4$  ?

- A.  $x = \frac{1}{12}$       B.  $x = -2$       C.  $x = 3$       D.  $x = -3$       E.  $y = 3$

25. Simplify this expression:  $5 - 2[-2^2 - (3 \cdot 2^3 - 12 \div \sqrt{9})]$

- A. -72      B. -48      C. 53      D. 37      E. 21