

**Quiz #3**  
MATH 142  
due Sept 17 , 2009

Name (print): \_\_\_\_\_  
Seat # \_\_\_\_\_, Section 501, 507 or 508  
e-mail address: \_\_\_\_\_

\_\_\_\_\_ 1. (2 points) Find the domain of the function:  $f(x) = \frac{\sqrt{-4 + 2x}}{\ln(x - 5)}$ , and write your answer in **interval notation**.

\_\_\_\_\_ 2. (2 points) Evaluate the following piecewise defined function.

$$f(x) = \begin{cases} |x + 4|, & \text{if } x < 1 \\ 2x + 3, & \text{if } x > 1 \end{cases}$$

a.  $f(-2)$

b.  $f(3)$

\_\_\_\_\_ 3. (2 points) Using completing the square, write in vertex form:  $f(x) = \frac{1}{3}x^2 - 12x - 4$

\_\_\_\_\_ 4. (2 points) If \$2585 is deposited in an account paying  $7\frac{1}{4}\%$  compounded weekly, find the accumulated balance, assuming no withdrawals, after 7 years.

Round your answer to the nearest cent.

\_\_\_\_\_ 5. (2pts) The table below shows the price of gasoline per gallon over a 20 year period. Let  $x$  represent the number of years since 1975 and  $G$  represent the cost of gasoline per gallon. Find the best fitting linear regression to model the cost of gasoline over that time period.

a. The equation is

b. The correct model predicts the cost of gasoline in 2010 will be

Year	1980	1985	1990	1995	2000
Price per gallon	\$1.16	\$1.30	\$1.79	\$2.57	\$2.29