

MTH 138 Practice Quiz #7

Name \_\_\_\_\_ Row \_\_\_\_\_

**Show Essential work. Note that these sample questions are presented primarily for the purpose of helping you solidify the acquired concepts on related topics. The questions on the actual quiz may differ in type and format.**

(1) It is known that the function  $f(x) = \frac{2x-1}{3x+1}$  is invertible. Find its inverse function  $f^{-1}(x)$ .

(2) Solve for  $x$ :  $9^{2x} \cdot \left(\frac{1}{3}\right)^{x+2} = 27 \cdot 3^{x-3}$

(3) In 1970 the minimum wage in the United States was \$1.60 per hour. Assuming the average annual rate of inflation was 5% during since then, find the equivalent minimum wage in the year 2010.

(4) Find all points on the line  $y = 3x$  that are a distance  $\sqrt{5}$  from the point  $(1, 2)$ .

Answers.

$$(1) f^{-1}(x) = \frac{x+1}{2-3x}$$

$$(2) x = \frac{5}{6}$$

(3) Approximately \$11.26 per hour

$$(4) (0, 0), \left(\frac{7}{5}, \frac{21}{5}\right)$$