

(15pts) NAME (printed neatly): _____

(10pts) Section Number (circle correct section): 503 (10:20am) 521 (11:30am) 523 (1:50pm)

Directions for taking quizzes: Write your name legibly where indicated on both sides of this paper. Circle your correct section number on both sides of this paper. On the reverse side of this paper, circle the letter category which corresponds to the first letter of your last name. After you have completed this quiz, fold this paper lengthwise such that this side is on the inside of the fold (so your quiz grade will be hidden when returning papers). Turn your quiz in on the appropriate pile as determined by the first letter of your last name. You must use your own calculator; you may not share calculators.

1. (25pts) What items do you need to bring with you to every one of your Math 141 exams? Check all that apply.

_____ a pencil and eraser

_____ a scantron [you need a scantron 882E ONLY for the final exam]

_____ your TAMU student ID

_____ TI-83 or TI 84 graphing calculator

_____ a ruler

2. Given the line $y = 5x - 6$.

a. (5pts) What is the slope of the line that is perpendicular to this line?

$$\frac{-1}{5}$$

b. (5 points) What is the equation of the horizontal line that goes through the x -intercept of the given line?

$$y = 0$$

c. (5points) What is the equation of the vertical line that goes through the given line $y = 5x - 6$ at the point where the y -coordinate is 4.

$$4 = 5x - 6$$

$$10 = 5x$$

$$2 = x$$

$$(2, 4)$$

So the equation of the vertical line through point $(2, 4)$ is $x = 2$.

3. (20 pts) What should I *always* include in the *subject line* of any emails I send to Dr. Sherry? Check all that apply.

_____ first and last name

_____ my UIN (university identification number)

_____ Math 141- xxx where xxx is my section number

_____ the date

4. (15pts) The demand for a VCR is 8000 units when the price is \$230. If the price drops down to \$210 then 9000 are sold. The manufacturer will not market VCRs if the price drops to \$100. For each \$60 increase in price, the manufacturer will supply an additional 1300 VCRs. How many VCR's are made at the equilibrium point? (Round your answer to the nearest integer.)

demand

(x, p)

(8000, 230)

(9000, 210)

$$m = \frac{210 - 230}{9000 - 8000} = \frac{-1}{50}$$

$$p - 230 = \frac{-1}{50}(x - 8000)$$

$$p - 230 = \frac{-1}{50}x + 160$$

$$p = \frac{-1}{50}x + 390$$

supply

(x, p)

(0, 100)

$(0+1300, 100+60) = (1300, 160)$

$$m = \frac{160 - 100}{1300 - 0} = \frac{3}{65}$$

$$p - 100 = \frac{3}{65}(x - 0)$$

$$p - 100 = \frac{3}{65}x$$

$$p = \frac{3}{65}x + 100$$

Demand = Supply at the equilibrium point

$$\frac{-1}{50}x + 390 = \frac{3}{65}x + 100$$

$$\frac{-43}{65}x = -290$$

$$x = \frac{188500}{43} \approx 4384$$

\therefore **4384 VCRs** are made at the equilibrium point.