Ma 111   Exam 1   Fall 2002
                             ANSWER KEY

Name: _____

Place your answer in the spaces provided. You must show your work to receive credit.

(8pts)1. Evaluate the expression using the values provided.

$$2(4a+b) \quad (a+2b) \quad \text{for} \quad a=3 \ and \ b=-2$$

$$-20$$

(6 pts) 2. Add. $\dfrac{2}{3}+\left(-\dfrac{4}{5}\right)$

$$-\dfrac{2}{15}$$

(8 pts) 3. Evaluate.

$$\dfrac{(5-7)^3+|3-8|}{6-4\cdot 2}$$

$$\dfrac{3}{2}$$

(8 pts) 4. Simplify completely.

$$2x-3\big[5+2(3x-4)\big]$$

$$-16x+9$$

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(10 pts) 5. Solve. $-\dfrac{1}{4}(12a-8)=2-(16-5a)$

$a =$ $\boxed{2}$

(6 pts) 6. Solve $3x+4y=8$ for y.

$y =$ $\boxed{-\dfrac{3}{4}x+2 \quad \text{or} \quad \dfrac{8-3x}{4}}$

(10 pts) 7. Simplify completely. Do not leave negative exponents in your answer.

$$\left(\frac{5a^{-6}b^{5}c^{2}}{3a^{-3}b^{0}c^{-4}}\right)^{2}$$

$\boxed{\dfrac{25b^{10}c^{12}}{9a^{6}}}$

(8 pts) 8. Simplify and write scientific notation for the answer.
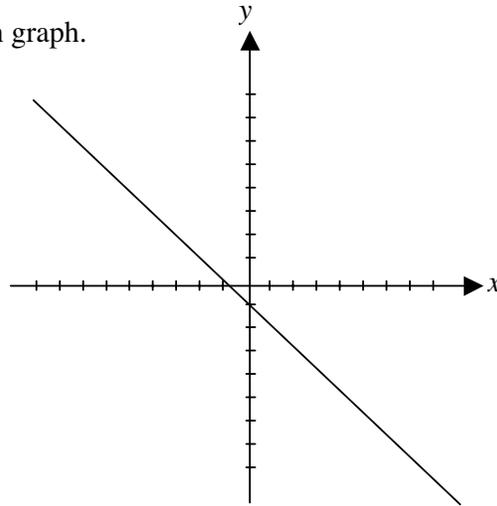
$$(3.1\times10^{-4})(2.7\times10^{-7})$$

$\boxed{8.37\times10^{-11}}$

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(10 pts) 9. Make a table of at least three pairs of
x and y values for this equation and then graph.
$$y = -x - 1$$

x	y

(8 pts) 10. Joanne sells cosmetics from her home. For each order she adds 30% commission to the wholesale price for herself plus a $2.00 handling fee. If she charges a customer $28.00 for an order, what was the wholesale price? (Name the variable and **set up an equation**. Do NOT solve.)

$$x + .30x + 2.00 = 28.00$$

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10 pts) 11. The width of a rectangle is 1/3 of its length and its perimeter is 112 cm. Find the
          dimensions of the rectangle. (Draw a picture, name the variable, **set up an
          equation**, and solve.)

width = | 14 cm

length = | 42 cm

(8 pts) 12. Kevin has $800 to invest at a bank that pays 4.5% simple interest on certificates of
          deposit. How many years will it take for Kevin to earn $72 in interest?
          (Name the variable, **set up an equation**, and solve.)

2 years