**Name:** KEY

**Math 1040-001**
Quiz 1
January 15, 2016

**1.** (5 points) Simplify the following expression:

$$\frac{10x + 15x^2}{5x}$$

**Solution.** Factor out $5x$ from the numerator and then cancel:

$$\frac{10x + 15x^2}{5x} = \frac{5x(2 + 3x)}{5x} = 2 + 3x$$

**2,** (5 points) Simplify the following expression:

$$(x^2y^{-3})(x^{-1}y^4)(x^0y)$$

**Solution.** Collect the $x$ terms and $y$ terms and then add the exponents:

$$(x^2y^{-3})(x^{-1}y^4)(x^0y) = (x^2x^{-1}x^0)(y^{-3}y^4y^1) = x^{2-1+0}y^{-3+4+1} = x^1y^2$$

**3.** (10 points) You are working the cash register and a customer comes to you with two 20% off coupons and an item with a price tag of \$100. Your boss tells you not to add the two percentages, but instead you are to first take 20% off the price of the item and then take an additional 20% off the reduced price of the item.

How much do you charge for the item (assuming there is no tax)?

**Solution.** First apply one coupon:

$$\$100(1 - 0.20) = \$100(0.80) = \$80$$

then apply the second coupon:

$$\$80(1 - 0.20) = \$80(0.80) = \$64$$