Name: *Answer Key*

Math 71 Elementary Algebra

1/10/2017
Quiz 3

Calculators are not allowed. Answers may be left as improper fractions, mixed numbers, or decimals. Box your final answers. If you need more space, you may continue your work on the back of the page.

1. (5 points) Solve for x. $\frac{48}{27} = \frac{x}{18}$ → $48 \cdot 18 = 27x$

$$\frac{48 \cdot 18}{27} = x \longrightarrow \frac{3 \cdot 16 \cdot 9 \cdot 2}{3 \cdot 9} = x \longrightarrow \boxed{x = 32}$$

2. (5 points) If 2 cups of rice serves 5 people, how many cups of rice are needed to serve 8 people?

$$\frac{CUPS}{PEOPLE} : \quad \frac{2}{5} = \frac{x}{8} \longrightarrow 2 \cdot 8 = 5x \longrightarrow x = \frac{2 \cdot 8}{5} = \boxed{\frac{16}{5} \text{ or } 3\frac{1}{5}}$$

3. (a) (5 points) A \$200 television goes on sale for 20% off. Find the sale price of the television.

$$80\% \text{ of } 200 = \frac{80}{100} \cdot 200 = \boxed{\$160}$$

(b) (5 points) You have a store coupon that takes an additional 10% off *of the sale price*. What is the cost of the television now? (Ignore tax.)

$$90\% \text{ of } 160 = \frac{90}{100} \cdot 160 = \boxed{\$144}$$

4. (5 points) It is reported on the evening news that a certain stock's price increased 4% to finish the day at \$182. What was the price of the stock at the beginning of the day?

$$182 \text{ is } 104\% \text{ of } x \longrightarrow \frac{182}{x} = \frac{104}{100} = \frac{26}{25} \longrightarrow 182 \cdot 25 = 26x$$

$$x = \frac{182 \cdot 25}{26} = \frac{26 \cdot 7 \cdot 25}{26} = \boxed{\$175}$$

5. (5 BONUS points) The same car is sold for the same price at two different car dealerships. At the first dealership, the sales associate offers you a \$1000 discount. At the second dealership, the sales associate offers you an 8% discount. If the deals are identical, what is the original price of the car?

$$1000 \text{ is } 8\% \text{ of } x$$

$$\frac{1000}{x} = \frac{8}{100} \longrightarrow 8x = 100000$$

$$x = \frac{100000}{8} = \boxed{\$12,500}$$