

## Math 107 Quiz #2 Answers

1. Here are two ways to calculate the percentage increase.

- The absolute change is  $7 - 5 = \$2$ . The relative change is  $\frac{2}{5} = 0.4$  or 40%.

So, the price has increased by  $\boxed{40\%}$ .

- The ratio  $\frac{7}{5} = 1.4 = 140\%$ . This means that the new price is  $\boxed{40\%}$  more than the old price.

2. (a) 200 out of the 10,000 people have the disease, which is  $\boxed{2\%}$ . ( $\frac{200}{10,000} = 0.02$ )

(b) Out of the 392 that test positive, only 196 actually have the disease. Since  $\frac{196}{392} = 0.5$ , only  $\boxed{50\%}$  have the disease of those that test positive.

3.  $A = 2000(1 + 0.06)^{15} \approx \boxed{\$4793.12}$

4.  $10,000 = P(1 + \frac{0.09}{12})^{12(10)} \Rightarrow P = \frac{10,000}{(1 + \frac{0.09}{12})^{120}} \approx \boxed{\$4079.37}$

5.  $APY = (1 + \frac{0.1}{4})^4 - 1 \approx 0.1038 = \boxed{10.38\%}$