**Activity 1.5.3 Composition of Function Applications**

1. Amazon Prime is having a 40% sale on all gaming systems. Jim is a “premium” member and received a coupon for an additional 10% off (taken off the sale price).
2. Write a function to represent the price of a gaming system with the original 40% sale.
3. Write a function to represent the price of a gaming system with just the 10% coupon.
4. Write a composite function to represent the price a gaming system bought on sale and then discounted using the coupon.
5. What would be Jim’s price for a PS4 (Playstation 4) gaming console that originally cost $459?
6. In Connecticut the sales tax rate is 6.35%. Write a function to represent the price for an item including the sales tax; then a composite function to represent the price after using the coupon, including the sales tax. What would be Jim’s final cost including tax?
7. On August 20, 1974, Nolan Ryan, of the Los Angeles Angels, threw the fastest pitch ever recorded in a game against the Detroit Tigers. Baseball pitches are recorded in miles per hour, 50 feet from the plate (mph FFE.)
8. Write a function to convert his speed from miles per hour into feet per hour.
9. Write a function to convert his speed from miles per hour into miles per second.
10. Write a composite function to convert his speed from miles per hour into feet per second.
11. Ryan’s pitch is recorded at 108.1 mph FFE. What is the speed of his pitch in feet per second?
12. My parents just bought a new large screen TV. There is 6.35% tax and a $50 installation fee.
13. Write a function to represent the cost of the TV, including tax.
14. Write a function to represent the cost of the TV with installation.
15. Write a composite function to represent the total cost of the TV, installation and tax. (The installation fee is taxable.)
16. The TV my parents chose cost $1,896.59. Calculate their total cost.
17. For a graduation present, Jacinda received a 10-day trip to Europe followed by a 5-day trip to China. She saved up some spending money and converted it to Euros for a $15 fee. However, she ended up using her credit card in Europe, so then she exchanged her Euros for yuan for a $21 fee.
18. Write a function to represent how much money Jacinda has in euros. (Research the current exchange rate.)
19. Write a function to represent how much money Jacinda has in yuan. (Research the current exchange rate.)
20. Write a composite function to represent how much money Jacinda ended up arriving in China with (in yuan).
21. If Jacinda had saved $1500, how much yuan did she have to spend in China?