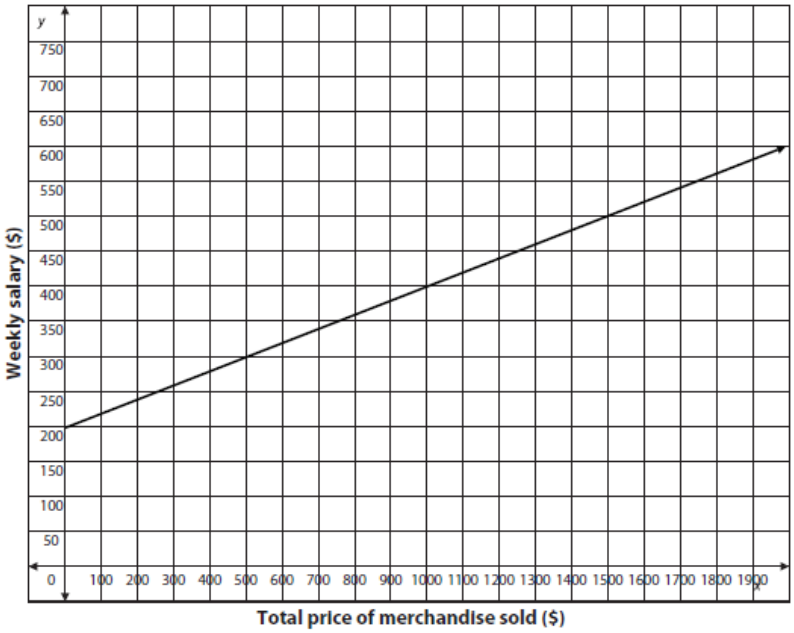
**Day 11: Comparing Multiple Representations of Functions** **Name:** _____

**Practice Assignment** **Block:** _____

1. Your employer has offered two pay scales for you to choose from. The first option is to receive a base salary of $250 a week plus 15% of the price of any merchandise you sell. The second option is represented in the graph below. Compare the properties of the functions.




**First Option**

y-intercept:

slope:

**Second Option**

y-intercept:

slope:

a. Which function has a higher starting salary and why?

b. Which function has a greater commission rate and why?

2. Compare the properties of the functions below in terms of the problem situation:

**Rental Store A**

A rental store charges $40 to rent a steam cleaner, plus an additional $4 per hour.

a. Which function has a higher staring price and why?

b. Which function has a higher rental cost per hour and why?

**Rental Store B**

The table below shows the total cost in dollars to rent a steam cleaner at a different rental store, g(x) represents the total cost after x hours.

| Hours ($x$) | Total cost ($g(x)$) |
|---|---|
| 3 | 46 |
| 4 | 53 |
| 5 | 60 |
| 6 | 67 |

3. Compare the properties of the functions below in terms of the problem situation:

**Job Offer A**
Jazlynn received a job offer with a starting salary of $32,000 and a 1.5% increase every year.

**Job Offer B**
She received a second job offer represented by the following equation:
$f(x) = 30{,}000(1+ 0.02)^x$.

a. Which function has a higher staring salary and why?

b. Which function has a greater pay increase rate and why?

4. Compare the properties of the functions below in terms of the problem situation:

**Allatoona High School**
The enrollment of Allatoona High School, f(x), after x years is modeled by the function
$f(x) = 1700(1 + 0.025)^x$.

a. Which school has a higher staring population and why?

**Harrison High School**
The following table shows the enrollment of Harrison High School, g(x), after x years.

| $x$ | $g(x)$ |
|---|---|
| 0 | 1900 |
| 1 | 1872 |
| 2 | 1843 |
| 3 | 1816 |
| 4 | 1789 |

b. Which function has a greater enrollment rate and why?

5. Three turtles are running a race. The following are their information from the starting line in ***t*** number of minutes.

**Elmer**: $E(t) = t^2 - 4t + 4$

**Fred**: $F(t) = 3(t-2)^2 - 18$

**George**:

| **x** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| **G(t)** | **-18** | **-20** | **-18** | **-12** | **-2** |

a. Which turtle is winning the race at *t* = 2?

b. Which turtle is winning the race at *t* = 6?

c. Who would you predict to win the race if the race was 40 feet long and why?

6. Three students are shooting wads of paper with a rubber band, aiming for a trash can in the front of the room. The height of each student's paper wad, in feet, is given as a function of the time in seconds. Which student's paper wad flies the highest?

- The path of Micaiah's paper was is modeled by the equation $f(x) = -x^2 + 2x + 7$
- After 3 seconds, Trey's paper wad achieves a maximum height of 6.5 feet above the floor.
- Quincy's paper wad is estimated to reach the heights shown in the table below.

| $x$ | 0 | 2 | 3 | 4 |
|---|---|---|---|---|
| $y$ | 3 | 6 | 7 | 6 |