Name: _________________________________

1. Spacetime Warner Cable charges for Internet service according to the formula: \( C(n) = 40 + \frac{1}{50}n \) where \( n \) is kilobits of data and \( C(n) \) is the monthly charge in dollars. Find and interpret the rate of change and initial value.

2. Using the knowledge that the conversion between Celsius and Fahrenheit is linear and that \( 32^\circ F = 0^\circ C \) and \( 212^\circ F = 100^\circ C \), find an equation that computes Celsius temperature in terms of Fahrenheit. Find the inverse equation that computes Fahrenheit in terms of Celsius. Is there a temperature that is the same in both Fahrenheit and Celsius?

3. What are the horizontal and vertical intercepts of \( 5x + 5y = 10 \)

Answer: ________________________________
4. Ride-sharing companies Doober and Dryft offer two different pricing schemes. With Doober, there is a fixed charge of $3 plus $0.40 per mile. With Dryft, there is a fixed charge of $1 plus $0.50 per mile. What company should you use for shorter rides and which company should you use for longer rides? What’s the break-even point when it doesn’t matter which company you use?

5. The number of followers I have on popular social media platform, MyFace, was 4000 in 2010, and then 6500 in 2012. Assuming linear growth, how many followers will I have in 2016? When will I have 10000 followers? When did I sign up for MyFace?

6. Plot my number of followers from the above problem with the year on the horizontal axis.
7. Solve $|x + 5| = 2$ for $x$

Answer: ________________

8. Solve $2|4 - x| = -\frac{1}{2}$ for $x$

Answer: ________________

9. Solve $|6x| = |-6|$ for $x$

Answer: ________________

10. Solve $\frac{1}{2}|2x + 2| - 15 = 1$ for $x$

Answer: ________________

Cont.
11. Solve \(|x + 4| > 2\) for \(x\)

Answer: ________________________________

12. Solve \(4|3 - x| < -\frac{1}{5}\) for \(x\)

Answer: ________________________________

13. Solve \(|5x| \geq | - 7|\) for \(x\)

Answer: ________________________________

14. Solve \(\frac{1}{2}| - x + 2| - 1 \leq 10\) for \(x\)

Answer: ________________________________

The End.