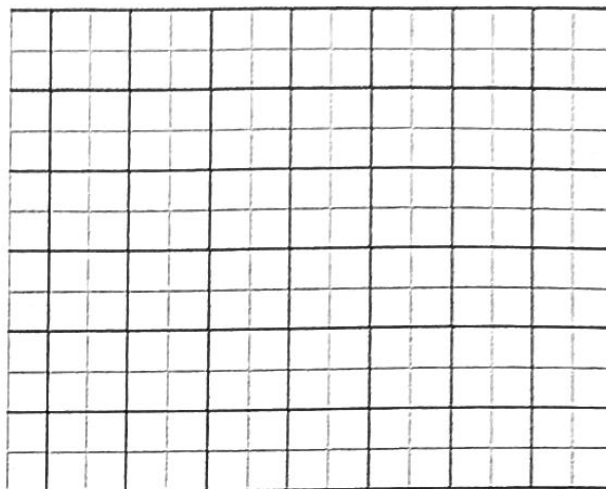


WRITING PIECEWISE FUNCTIONS

For each, write a piecewise function to represent the situation. Be sure to define the variable first. Provide a graph when the graph paper is present.

1. A taxi charges \$5 minimum to ride up to 3 miles and then charges \$0.50 for each mile beyond 3. Represent the total cost.

$$f(x) = \left\{ \right.$$



- 2.) A store charges \$15 per t-shirt for orders of 50 or fewer t-shirts, \$13.50 per t-shirt for orders of 75 or fewer but more than 50 t-shirts, and \$12.50 per t-shirt for orders of more than 75 t-shirts. Represent the total cost.

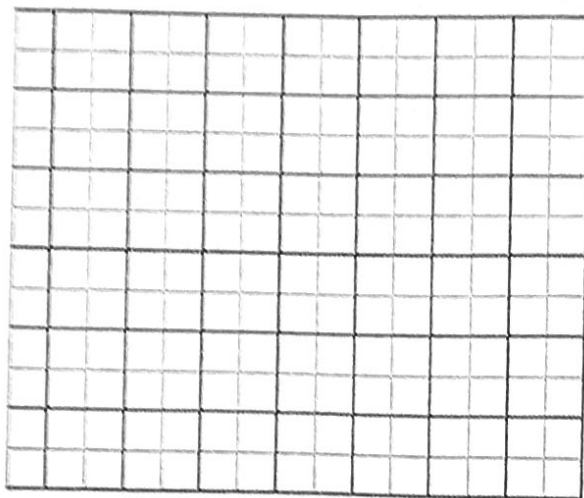
$$f(x) = \left\{ \right.$$

- 3.) The postal service charges \$1.95 for a package up to 4 ounces and \$0.17 for each additional ounce up to 13 ounces. Represent the total cost.

$$f(x) = \left\{ \right.$$

4. A parking garage charges \$3 per half hour to park. For each additional half hour (or portion of half hour), the charge is an additional \$3 until you reach \$8. Represent the total cost.

$$f(x) = \left\{ \right.$$



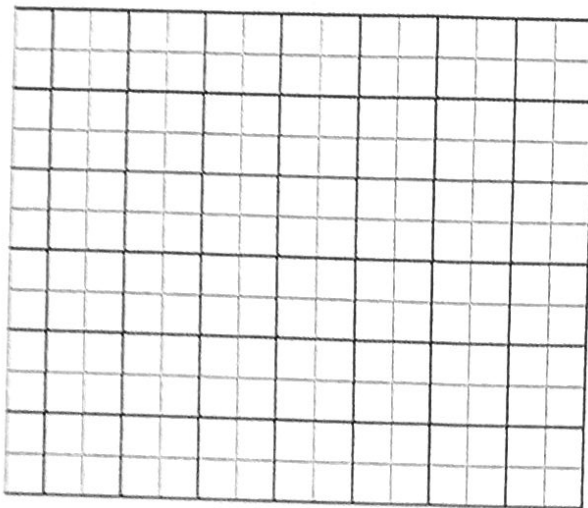
5. A horseback riding stable charges by the hour. The rate for the first hour is \$25, each hour or portion of an hour thereafter costs an additional \$15.00. There is a four hour maximum. If you keep the horse out more than 5 hours, the price increases by \$50 an hour. Represent cost per hour then rewrite representing total cost.

$$f(x) = \left\{ \right.$$

$$f(x) = \left\{ \right.$$

6. A school club is looking to buy t-shirts to sell. After much investigating, the club found a company that offered a discount based on quantity orders. T-shirts cost \$11 each for orders less than 10. Orders of 10 or more but less than 25 are \$9 per t-shirt, orders of 25 or more but less than 50 are \$6.50, and orders of 50 or more are \$5.50 each. Represent total cost.

$$f(x) = \left\{ \right.$$



How many shirts should I order if I need 9 t-shirts?

7. Home Depot charges \$20 a day plus \$0.15 per mile to rent a pick-up truck. Home Depot offers a discount of \$0.05 a mile if you drive over 10 miles a day. Or they offer a discount of \$0.10 a mile if you drive over 20 miles a day. Represent total cost.

$$f(x) = \left\{ \right.$$

8. You have a summer job that pays time and a half for overtime. That is, if you work more than 40 hours per week, your hourly wage for the extra hours is 1.5 times your normal hourly wage of \$7. Represent total wage.

$$f(x) = \left\{ \right.$$

How much will you get paid if you work 45 hours?

9. The pay structure at a parking garage is \$3 per hour for the first 4 hours. For any number of hours parked after 4 hours, it costs \$2 per hour to park. Represent total cost.

$$f(x) = \left\{ \right.$$

10. The function below shows the week day parking charges of a parking lot. Describe the scenario if x represents the number of hours parked.

$$f(x) = \begin{cases} 5x, & x \leq 3 \\ 10, & x > 3 \end{cases}$$

11. A silk-screen shop charges an initial fee of \$20 to create the silk screen. The price per shirt is \$17 for orders of 50 or fewer and \$15.80 per shirt for orders of more than 50 shirts. Represent the total cost.

$$f(x) = \left\{ \right.$$

12. Part of the amount of Social Security tax (FICA) you pay depends on your annual income. As of 2006, you pay 6.2% of your income if it is less than \$94,200. If your income is at least \$94,200, you pay a fixed amount of \$5840.40. Represent total tax paid.

$$f(x) = \left\{ \right.$$

13. In a certain country, income tax is assessed as follows: There is no tax on income up to \$15,000 and up to \$30,000 is taxed at 12%. Income over \$30,000 is taxed at 18%. Represent percent taxed.

$$f(x) = \left\{ \right.$$

