Extra Piecewise Problems

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| --- | --- | --- | --- | --- | --- | --- |
| 1. Graph each function. | | | | | | |
| a) | | | | b) | | |
| c) | | | | d) | | |
| e) | | | | f) | | |
| 2. Evaluate the function for the given value of *x*. | | | | | | |
|  | | |  | | | |
| a) | b) | | | | | c) |
| d) | e) | | | | | f) |
| 3. Match the piecewise function with its graph. | | | | | | |
| I. | II. | | | | | III. |
| IV. | V. | | | | | VI. |
|  | | | | | | |
| 4. For the following function *g(x)*, decide if each of the statements is correct, by circling true or false. If it is incorrect, fix the equation or domain restriction to make it true. | | | | | | |
|  | | |  |  |  | | --- | --- | --- | | T | F | a) From A to B, the restriction is . | | T | F | b) From B to C, the equation is . | | T | F | c) From C to D, the equation is . | | T | F | d) To the right of E, the equation is . | | T | F | e) To the right of E, the restriction is . | | | | | |
| 5. Write the function that describes the graph. | | | | | | |
| a) | | | | |  | |
| b) | | | | |  | |
| 6. The admission rates at an amusement park are as follows. | | | | | | |
| Children 5 years old and under: free  Children between 5 & 12 years old, inclusive: $10.00  Children between 12 & 18 years old, inclusive: $25.00  Adults: $35.00  a) Write a piecewise function that describes the admission price based on a given age. | | | | | b) Graph the f unction. Be sure to label your axes. | |
| 7. George has a job that pays $12.00 per hour. He earns his regular pay for the first forty hours he works in a week, and any hours over forty are earned at time and a half. | | | | | | |
| a) Write a piecewise function that describes the George’s weekly pay.  c) How much would George earn for a 34 hour week?  d) How much would George earn for a 42 hour week?  e) How much would George earn for a 51 hour week? | | | | | b) Graph the f unction. Be sure to label your axes. | |
| 8. The amount of Social Security tax you pay, part of your Federal Insurance Contributions Act (FICA) deductions, depends on your annual income. As of 2015 you pay 4% of your income if it is less than $30,000. If your income is at least $30,000, you pay 6.5% of your income. If your income is at least $75,000, you pay a fixed amount of $5500. | | | | | | |
| a) Write a piecewise function that describes the Social Security tax.  c) How much Social Security tax do you pay if you make $50,000 per year? | | | | | b) Graph the f unction. Be sure to label your axes. | |