**1. Complete the following statement.**

|  |  |
| --- | --- |
| **a.** | \_\_\_\_\_\_\_\_\_\_\_ are critical points at which a function changes its increasing or decreasing behavior. At these points, the function has a maximum or a minimum value, either relative or absolute. |
| **b.** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the graph changes its shape, but not it’s increasing or decreasing behavior. |

**2. Write T for true or F for false**

|  |  |  |
| --- | --- | --- |
| **a.** | A relative maximum value of a function is the greatest $y$ -value on some interval of the domain. |  |
| **b.** | The least value that a function assumes over its domain is called the absolute maximum. |  |

**Multiple Choices**

**3.** Which of the following is the average rate of change of $ f\left(x\right)=2x^{2}+x-2$ over the interval $\left[2;0\right]$

|  |  |  |
| --- | --- | --- |
| **a.** | $$5$$ |  |
| **b.** | $$-5$$ |  |
| **c.** | $$2$$ |  |

**4.** Which of the following is the average rate of change of $ f\left(x\right)=x^{3}-2$ over the interval $\left[0;1\right]$

|  |  |  |
| --- | --- | --- |
| **a.** | $$-1$$ |  |
| **b.** | $$1$$ |  |
| **c.** | $$2$$ |  |

**5.** Which of the following is the average rate of change of $ f\left(x\right)=\sqrt{x} $over the interval $\left[25;16\right]$

|  |  |  |
| --- | --- | --- |
| **a.** | $$-\frac{1}{5}$$ |  |
| **b.** | $$\frac{1}{9}$$ |  |
| **c.** | $$-\frac{1}{9}$$ |  |

**ANSWERS**

**1. Complete the following statement.**

|  |  |
| --- | --- |
| **a.** | Extrema are critical points at which a function changes its increasing or decreasing behavior. At these points, the function has a maximum or a minimum value, either relative or absolute. |
| **b.** | At points of inflection, the graph changes its shape, but not it’s increasing or decreasing behavior. |

**2. Write T for true or F for false**

|  |  |  |
| --- | --- | --- |
| **a.** | A relative maximum value of a function is the greatest $y$ -value on some interval of the domain. | **T** |
| **b.** | The least value that a function assumes over its domain is called the absolute maximum. | **F** |

**Multiple Choices**

**3.** Which of the following is the average rate of change of $ f\left(x\right)=2x^{2}+x-2$ over the interval $\left[2;0\right]$

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| --- | --- | --- |
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**5.** Which of the following is the average rate of change of $ f\left(x\right)=\sqrt{x} $over the interval $\left[25;16\right]$

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