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| 1. Find (*f* + *g*)(*x*).  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 2*x* | |  | b. | 4*x* | |  | c. | –4*x* | |  | d. | –2*x* | |  | e. | 2*x* + 8 |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.9a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/24/2014 9:24 AM | |

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| 2. Find (*f* - *g*)(*x*).  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 2*x* - 6 | |  | b. | 6 | |  | c. | 2*x* - 3 | |  | d. | 2*x* + 6 | |  | e. | 2*x* |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.9b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/24/2014 9:25 AM | |

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| 3. Find (*f* + *g*)(*x*).  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.10a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 5:15 AM | |

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| 4. Find (*f* - *g*)(*x*).  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.10b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 5:18 AM | |

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| 5. Find (*fg*)(*x*).  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.11c | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 5:23 AM | |

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| 6. Find (*f*/ *g*)(*x*). What is the domain of  *f*/ *g*?  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | ; all real numbers *x*. | |  | b. | ; all real numbers *x* except *x* = 0 | |  | c. | ; all real numbers *x* except *x* = | |  | d. | ; all real numbers *x* except *x* = 0 | |  | e. | ; all real numbers *x* except *x* = |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.11d | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 5:37 AM | |

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| 7. Find (*f*  + *g*)(*x*).  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.13a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 12:50 AM | |

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| 8. Find .  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.13b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 5:42 AM | |

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| 9. Find .  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.15c | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/26/2014 11:35 PM | |

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| 10. Find .  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. | ​ | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.15d | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/15/2015 9:37 AM | |

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| 11. Evaluate the indicated function for  and .  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 12 | |  | b. | –10 | |  | c. | 7 | |  | d. | 14 | |  | e. | 10 |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.17 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:00 AM | |

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| 12. Evaluate the indicated function for  and .  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 28 | |  | b. | 38 | |  | c. | –38 | |  | d. | 125 | |  | e. | 17 |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.18 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:10 AM | |

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| 13. Evaluate the indicated function for  and .  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 48 | |  | b. | 39 | |  | c. | 9 | |  | d. | 0 | |  | e. | –39 |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.19 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:11 AM | |

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| 14. Evaluate the indicated function for  and .  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.21 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:16 AM | |

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| 15. ​Evaluate the indicated function for  and .  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 92 | |  | b. | 90 | |  | c. | –86 | |  | d. | 89 | |  | e. | 91 |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.23 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:19 AM | |

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| 16. ​​Evaluate the indicated function for  and .  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 30 | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.25 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:24 AM | |

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| 17. ​​​Evaluate the indicated function for  and .  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.27 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:28 AM | |

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| 18. Find .  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.37a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:34 AM | |

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| 19. ​Find .  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.37b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:37 AM | |

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| 20. ​Find .  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.37c | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:41 AM | |

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| 21. Find  and the domain of the composite function.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | Domain of : all real numbers *x* | |  | b. | Domain of : all real numbers *x* | |  | c. | Domain of : all real numbers *x* | |  | d. | Domain of : all real numbers *x* | |  | e. | Domain of : all real numbers *x* |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.41a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/15/2015 9:59 AM | |

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| 22. Find  and the domain of the composite function.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | Domain of : all real numbers *x* | |  | b. | Domain of : all real numbers *x* | |  | c. | Domain of : all real numbers *x* | |  | d. | Domain of : all real numbers *x* | |  | e. | Domain of : all real numbers *x* |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.43b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/15/2015 10:09 AM | |

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| 23. Find  and the domain of the composite function.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | Domain of : all real numbers *x* | |  | b. | Domain of : all real numbers *x* | |  | c. | Domain of : all real numbers *x* | |  | d. | Domain of : all real numbers *x* | |  | e. | Domain of : all real numbers *x* |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.45a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/15/2015 10:11 AM | |

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| 24. Find and the domain of the composite function.  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | Domain of : all real numbers *x* | |  | b. | Domain of : all real numbers *x* | |  | c. | Domain of : all real numbers *x* | |  | d. | Domain of : all real numbers *x* | |  | e. | Domain of : all real numbers *x* |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.45b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/15/2015 10:27 AM | |

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| 25. Find  and the domain of the composite function.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | Domain of : all real numbers *x* except | |  | b. | Domain of : all real numbers *x* except | |  | c. | Domain of : all real numbers *x* except | |  | d. | Domain of : all real numbers *x* except | |  | e. | Domain of : all real numbers *x* except |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.47a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/15/2015 10:52 AM | |

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| 26. ​Find  and the domain of the composite function.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | Domain of : all real numbers *x* except | |  | b. | Domain of : all real numbers *x* except | |  | c. | Domain of : all real numbers *x* except | |  | d. | Domain of : all real numbers *x* except | |  | e. | Domain of : all real numbers *x* except |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.47b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/15/2015 10:55 AM | |

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| 27. The research and development department of an automobile manufacturer has determined that when a driver is required to stop quickly to avoid an accident, the distance (in feet) the car travels during the driver’s reaction time is given by , where *x* is the speed of the car in miles per hour. The distance (in feet) traveled while the driver is braking is given by . Find the function that represents the total stopping distance *T*.  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.61a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 7:54 AM | |

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| 28. A pebble is dropped into a calm pond, causing ripples in the form of concentric circles. The radius (in feet) of the outer ripple is , where *t* is the time in seconds after the pebble strikes the water. The area of the circle is given by the function . Find and interpret .  ​   |  |  |  | | --- | --- | --- | |  | a. | ;  represents the area of the circle  at time *t.* | |  | b. | ;  represents the area of the circle  at time *t.* | |  | c. | ;  represents the area of the circle  at time *t.* | |  | d. | ;  represents the area of the circle at time *t.* | |  | e. | ;  represents the area of the circle  at time *t.* |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.71 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/27/2014 12:04 AM | |

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| 29. From 2003 through 2008, the sales  (in thousands of dollars) for one of two restaurants owned by the same parent company can be modeled by  ​  ​  where *t* = 3  represents  2003. During the same six-year period, the sales  (in thousands of dollars) for the second restaurant can be modeled by  ​  ​  Write a function  that represents the total sales of the two restaurants owned by the same parent company.  ​   |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.62a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 5:54 AM | |

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| 30. The total numbers of Navy personnel *N* (in thousands) and Marines personnel *M* (in thousands) from 2000 through 2007 can be approximated by the models  ​   and  ​  where *t* represents the year, with *t* = 0 corresponding to 2000.  ​  Find and interpret  .  ​   |  |  |  | | --- | --- | --- | |  | a. | , which represents the total number of Navy and Marines personnel combined. | |  | b. | , which represents the total number of Navy and Marines personnel combined. | |  | c. | , which represents the total number of Navy and Marines personnel combined. | |  | d. | , which represents the total number of Navy and Marines personnel combined. | |  | e. | , which represents the total number of Navy and Marines personnel combined. |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.65a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 9:11 AM | |

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| 31. The total numbers of Navy personnel *N* (in thousands) and Marines personnel *M* (in thousands) from 2000 through 2007 can be approximated by the models  ​   and  ​  where *t* represents the year, with *t* = 0 corresponding to 2000.  Find and interpret  .  ​   |  |  |  | | --- | --- | --- | |  | a. | , which represents the difference between the number of Navy personnel and the number of Marines personnel. | |  | b. | , which represents the difference between the number of Navy personnel and the number of Marines personnel. | |  | c. | , which represents the difference between the number of Navy personnel and the number of Marines personnel. | |  | d. | , which represents the difference between the number of Navy personnel and the number of Marines personnel. | |  | e. | , which represents the difference between the number of Navy personnel and the number of Marines personnel. |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.65b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 9:27 AM | |

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| 32. The number of people playing tennis *T* (in millions) in the United States from 2000 through 2007 can be approximated by the function  ​  ​  and the U.S. population *P* (in millions) from 2000 through 2007 can be approximated by the function , where *t* represents the year, with *t* = 0  corresponding to 2000.  Find .  ​   |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. |  | |  | d. | ​ | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.66a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 9:40 AM | |

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| 33. The number of people playing tennis *T* (in millions) in the United States from 2000 through 2007 can be approximated by the function  ​  ​  and the U.S. population *P* (in millions) from 2000 through 2007 can be approximated by the function , where *t* represents the year, with  *t* = 0 corresponding to 2000.  Evaluate the function  for *t* = 0 and 3.   |  |  |  | | --- | --- | --- | |  | a. | *h*(0) = 0.1060, *h*(3) = 0.0783 | |  | b. | *h*(0) = 0.3060, *h*(3) = 0.2783 | |  | c. | *h*(0) = –0.2060, *h*(3) = –0.1783 | |  | d. | *h*(0) = 0.1783, *h*(3) = 0.2060 | |  | e. | *h*(0) = –0.1060, *h*(3) = –0.0783 |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.66b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/27/2014 12:14 AM | |

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| 34. The spread of a contaminant is increasing in a circular pattern on the surface of a lake. The radius of the contaminant can be modeled by  , where *r* is the radius in meters and *t* is the time in hours since contamination.  ​  Find a function that gives the area *A* of the circular lake in terms of the time since the spread began.  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.72a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 10:02 AM | |

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| 35. The number *N* of bacteria in a refrigerated food is given by  where *T* is the temperature of the food in degrees Celsius. When the food is removed from refrigeration, the temperature of the food is given by  where *t* is the time in hours.  Find the bacteria count after 0.5 hour.  ​   |  |  |  | | --- | --- | --- | |  | a. | About 565 bacteria | |  | b. | About 793 bacteria | |  | c. | About 653 bacteria | |  | d. | About 390 bacteria | |  | e. | About 705 bacteria |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.73b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 10:07 AM | |

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| 36. The weekly cost *C* of producing  units *x* in a manufacturing process is given by  . The number of units *x* produced in *t* hours is given by .  ​  Find the cost of the units produced in 6 hours.  ​   |  |  |  | | --- | --- | --- | |  | a. | 11,855 | |  | b. | 11,850 | |  | c. | 11,846 | |  | d. | 13,350 | |  | e. | 11,854 |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.74b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 10:10 AM | |

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| 37. Determine whether the statement is true or false.  ​  If  *f*(*x*) = *x* + 1 and *g*(*x*) = 5*x*, then   .  ​   |  |  |  | | --- | --- | --- | |  | a. | False | |  | b. | True |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 5.6.77 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 10:15 AM | |

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| 38. The suggested retail price of a new hybrid car is *p* dollars. The dealership advertises  a factory rebate of $2000 .  ​  Select a function *R* in terms of *p* giving the cost of the hybrid car after receiving the rebate from the factory.  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.76a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 10:17 AM | |

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| 39. Consider the functions  and .  ​  Find .  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.84a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 12:27 AM | |

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| 40. Find (*f* + *g*)(*x*).​  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.11 | | *QUESTION TYPE:* | Multiple Choice | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 9/26/2014 6:18 AM | | *DATE MODIFIED:* | 9/29/2014 2:25 AM | |

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| 41. Find ( *f* / *g* )(*x*).    ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. | ​ | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.13 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 1:14 AM | |

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| 42. Find ( *fg* )(*x*).   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.14 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 4:23 AM | |

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| 43. Evaluate the indicated function for  and .  ​   |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.21 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 2:13 AM | |

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| 44. Find ( *f* − *g* )(*x*).  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.16 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/27/2014 12:25 AM | |

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| 45. Evaluate the indicated function for   and .  ( *fg* )(1)   |  |  |  | | --- | --- | --- | |  | a. | 15 | |  | b. | –35 | |  | c. | –23 | |  | d. | –25 | |  | e. | –33 |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.23 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 2:17 AM | |

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| 46. Find .  ​    ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. | ​ | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.44b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 2:28 AM | |

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| 47. Find .     |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.43a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 4:46 AM | |

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| 48. Find .  ​    ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.48a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 2:39 AM | |

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| 49. Use the graphs of  *f*  and *g* to evaluate the function.   |  |  |  | | --- | --- | --- | |  | a. | 1 | |  | b. | –2 | |  | c. | 4 | |  | d. | –1 | |  | e. | 2 |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.52a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/27/2014 2:06 AM | |

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| 50. The monthly cost *C* of running the machinery in a factory for *t* hours is given by  ​    The number of hours *t* needed to produce *x* products is given by .  Find the equation representing the cost *C* of manufacturing *x* products.   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.6.74a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 3:21 AM | |

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| 51. Let *f* (*x*) = 2*x* + 1, *g*(*x*) = 3*x* - 2. Find the function.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. | none of the above |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | False | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 3:23 AM | |

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| 52. Let *f* (*x*) = 2*x* - 1, *g*(*x*) = 3*x* - 2. Find the domain of the function.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 3:29 AM | |

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| 53. Let  . Find the composite function which expresses the given correspondence correctly.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. | none of the above |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | False | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 5:32 AM | |

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| 54. Find .  ​    ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 55 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 5:13 AM | |

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| 55. Let *f* (*x*) = *x*2 - 1, *g* (*x*) = 3*x* - 2. Find the value of the function.  ​   |  |  | | --- | --- | | *ANSWER:* | 37 | | *POINTS:* | 1 | | *QUESTION TYPE:* | Numeric Response | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 4:40 AM | |

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| 56. Let *f* (*x*) = 2*x* + 1, *g* (*x*) = 3*x* - 2. Find the function.  ​  ​  Please give the answer as a simplified expression (not an equation).   |  |  | | --- | --- | | *ANSWER:* |  | | *POINTS:* | 1 | | *QUESTION TYPE:* | Subjective Short Answer | | *HAS VARIABLES:* | False | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 4:37 AM | |

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| 57. Let . Find the composite function.  ​   |  |  | | --- | --- | | *ANSWER:* | |*x*| | | *POINTS:* | 1 | | *QUESTION TYPE:* | Subjective Short Answer | | *HAS VARIABLES:* | False | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 4:36 AM | |

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| 58. Let *f* (*x*) = 3*x*, *g* (*x*) = *x* + 1. Find the composite function.  ​  ​  ​  Please give the answer as an expression (not an equation).   |  |  | | --- | --- | | *ANSWER:* | 3*x* + 3 | | *POINTS:* | 1 | | *QUESTION TYPE:* | Subjective Short Answer | | *HAS VARIABLES:* | False | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 4:33 AM | |

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| Let *f* (*x*) = *x*2 + *x*, *g* (*x*) = *x*2 - 1.  Match the equivalent expressions.  ​  *Choose the correct letter for each question.*   |  |  | | --- | --- | | a. |  | | b. |  |  |  |  | | --- | --- | | *QUESTION TYPE:* | Matching | | *HAS VARIABLES:* | False | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 4:28 AM | |

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| 59.   |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | |

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| 60.   |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | |