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| 1. ​Find the zeros of the function algebraically.**​**  ​     |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.23 | | *QUESTION TYPE:* | Multiple Choice | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 9/24/2014 5:20 AM | | *DATE MODIFIED:* | 9/24/2014 5:35 AM | |

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| 2. ​Find the zeros of the function algebraically.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.24 | | *QUESTION TYPE:* | Multiple Choice | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 9/24/2014 7:35 AM | | *DATE MODIFIED:* | 9/24/2014 8:50 AM | |

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| 3. Find the zeros of the function algebraically.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | *x* = 5 | |  | b. | *x* = 10 | |  | c. | *x* = 9 | |  | d. | *x* = 8 | |  | e. | *x* = 0 |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.25 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/24/2014 8:56 AM | |

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| 4. ​Find the zeros of the function algebraically.**​**  ​     |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.26 | | *QUESTION TYPE:* | Multiple Choice | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 9/24/2014 8:59 AM | | *DATE MODIFIED:* | 9/24/2014 9:35 AM | |

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| 5. Find the zeros of the function algebraically.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.27 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/24/2014 9:40 AM | |

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| 6. Find the zeros of the function algebraically.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | *x* = 0, 16 | |  | b. |  | |  | c. |  | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.31 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/24/2014 9:51 AM | |

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| 7. Find the zeros of the function algebraically.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. | ​ | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.32 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/24/2014 9:53 AM | |

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| 8. Select the graph of the function and find the zeros of the function.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​ | b. | ​ | |  | c. | ​ | d. | ​ | |  | e. | ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.33 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 6:53 AM | |

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| 9. Select the graph of the function and find the zeros of the function.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  ​*x* = 0, 9 | b. | ​  ​*x* = –6, 0 | |  | c. | ​  ​*x* = –6, 0 | d. | ​  *x* =  6 | |  | e. | ​  *x* = 0, 6 |  |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.34 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 6:55 AM | |

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| 10. Select the graph of the function and find the zeros of the function.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​ | b. | ​ | |  | c. | ​ | d. | ​ | |  | e. | ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.35 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/16/2015 6:17 AM | |

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| 11. Find the average rate of change of the function from *x*1 = 0 to *x*2 = 3.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | The average rate of change from *x*1 = 0 to *x*2 = 3 is –2. | |  | b. | The average rate of change from *x*1 = 0 to *x*2 = 3 is 12. | |  | c. | The average rate of change from *x*1 = 0 to *x*2 = 3 is 2. | |  | d. | The average rate of change from *x*1 = 0 to *x*2 = 3 is –12. | |  | e. | The average rate of change from *x*1 = 0 to *x*2 = 3 is 19. |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.75 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 6:22 AM | |

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| 12. Find the average rate of change of the function from *x*1 = 0 to *x*2 = 3.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | The average rate of change from *x*1 = 0 to *x*2 = 3 is –3. | |  | b. | The average rate of change from *x*1 = 0 to *x*2 = 3 is 3. | |  | c. | The average rate of change from *x*1 = 0 to *x*2 = 3 is –10. | |  | d. | The average rate of change from ​*x*1 = 0 to *x*2 = 3 is 10. | |  | e. | The average rate of change from *x*1 = 0 to *x*2 = 3 is 19. |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.76 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 6:24 AM | |

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| 13. Find the average rate of change of the function from *x*1 = 1 to *x*2 = 5.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | The average rate of change from *x*1 = 1 to *x*2 = 5 is 24. | |  | b. | The average rate of change from *x*1 = 1 to *x*2 = 5 is –4. | |  | c. | The average rate of change from *x*1 = 1 to *x*2 = 5 is –24. | |  | d. | The average rate of change from *x*1 = 1 to *x*2 = 5 is –18. | |  | e. | The average rate of change from *x*1 = 1 to *x*2 = 5 is 4. |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.77 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 6:26 AM | |

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| 14. Find the average rate of change of the function from *x*1 = 1 to *x*2 = 5.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | The average rate of change from *x*1 = 1 to *x*2 = 5 is 19. | |  | b. | The average rate of change from *x*1 = 1 to *x*2 = 5 is 3. | |  | c. | The average rate of change from *x*1 = 1 to *x*2 = 5 is –6. | |  | d. | The average rate of change from *x*1 = 1 to *x*2 = 5 is –3. | |  | e. | The average rate of change from *x*1 = 1 to *x*2 = 5 is 6. |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.78 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 6:33 AM | |

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| 15. Find the average rate of change of the function from *x*1 = 1 to *x*2 = 3.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | The average rate of change from *x*1 = 1 to *x*2 = 3 is 19. | |  | b. | The average rate of change from *x*1 = 1 to *x*2 = 3 is –20. | |  | c. | The average rate of change from *x*1 = 1 to *x*2 = 3 is 8. | |  | d. | The average rate of change from *x*1 = 1 to *x*2 = 3 is –14. | |  | e. | The average rate of change from *x*1 = 1 to *x*2 = 3 is 14. |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.79 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 6:35 AM | |

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| 16. Find the average rate of change of the function from *x*1 = 1 to *x*2 = 6.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | The average rate of change from *x*1 = 1 to *x*2 = 6 is 19. | |  | b. | The average rate of change from *x*1 = 1 to *x*2 = 6 is –9. | |  | c. | The average rate of change from *x*1 = 1 to *x*2 = 6 is 9. | |  | d. | The average rate of change from *x*1 = 1 to *x*2 = 6 is –28. | |  | e. | The average rate of change from *x*1 = 1 to *x*2 = 6 is –2. |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.80 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 6:39 AM | |

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| 17. Select the graph of the function and determine whether it is even, odd, or neither.  ​  *f*(*x*) = 4  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Neither  ​ | b. | Odd​  ​ | |  | c. | Even  ​ | d. | Even  ​  ​ | |  | e. | Odd  ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.91 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/14/2015 9:01 AM | |

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| 18. Select the graph of the function and determine whether it is even, odd, or neither.  ​  *f*(*x*) = 6*x*– 5  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  Even | b. | ​  Even | |  | c. | ​  Odd | d. | ​  Neither | |  | e. | ​  Odd |  |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.93 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 7:09 AM | |

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| 19. Select the graph of the function and determine whether it is even, odd, or neither.  ​  *f*(*x*) = *x*2 – 6  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  Odd | b. | ​  Neither | |  | c. | ​  Odd | d. | ​  Neither | |  | e. | ​  Even |  |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.95 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 7:31 AM | |

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| 20. Select the graph of the function and determine whether it is even, odd, or neither.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  Even | b. | ​  Odd | |  | c. | ​  Odd | d. | ​  Even | |  | e. | ​  Neither |  |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.97 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 7:37 AM | |

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| 21. Select the graph of the function and determine whether it is even, odd, or neither.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  Even | b. | ​  Odd | |  | c. | ​  Neither | d. | ​  Even | |  | e. | ​  Odd |  |  |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.98 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 7:43 AM | |

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| 22. Select the graph of the function and determine whether it is even, odd, or neither.  ​  *f*(*x*) = |*x* + 6|  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  Even | b. | ​  Odd | |  | c. | ​  Neither | d. | ​  Odd | |  | e. | ​  Even |  |  |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.99 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 7:53 AM | |

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| 23. The number of lumens (time rate of flow of light) *L* from a fluorescent lamp can be approximated by the model  ​  *L* = –0.294*x*2 + 97.744*x* – 664.875,         20 ≤ *x* ≤ 90  ​  where *x* is the wattage of the lamp.  ​  Use a graphing utility to select the graph of the function. Use the graph to estimate the wattage necessary to obtain 2400 lumens.  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  40W | b. | ​  30W | |  | c. | ​  45W | d. | ​  25W | |  | e. | ​  35W |  |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.109 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/25/2014 8:36 AM | |

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| 24. Find the coordinates of a second point on the graph of a function  *f*  if the given point is on the graph and the function is even.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | None of the above |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.125a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/13/2015 10:02 AM | |

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| 25. Find the coordinates of a second point on the graph of a function  *f*  if the given point is on the graph and the function is odd.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | None of the above |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.126b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/13/2015 10:03 AM | |

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| 26. Find the coordinates of a second point on the graph of a function  *f*  if the given point is on the graph and the function is even.  ​  (4, 3)  ​   |  |  |  | | --- | --- | --- | |  | a. | (–4, –3) | |  | b. | (–4, 3) | |  | c. | (4, 3)  ​ | |  | d. | ​(4, –3)  ​ | |  | e. | None of the above |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.127a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/13/2015 10:03 AM | |

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| 27. Find the coordinates of a second point on the graph of a function  *f*  if the given point is on the graph and the function is odd.  ​  (8, –7)  ​   |  |  |  | | --- | --- | --- | |  | a. | (8, 7) | |  | b. | (8, –7)  ​ | |  | c. | (–8, –7)  ​ | |  | d. | (–8, 7)  ​ | |  | e. | None of the above |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.128b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/13/2015 10:04 AM | |

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| 28. Find the coordinates of a second point on the graph of a function  *f*  if the given point is on the graph and the function is even.  ​  (-*x*, *y*)  ​   |  |  |  | | --- | --- | --- | |  | a. | (-*x*, -*y*) | |  | b. | (*x*, -*y*) | |  | c. | (-*x*, *y*) | |  | d. | (*x*, *y*) | |  | e. | None of the above |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.129a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/13/2015 10:04 AM | |

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| 29. Find the coordinates of a second point on the graph of a function  *f*  if the given point is on the graph and the function is odd.  ​  (4*a*, 6*b*)  ​   |  |  |  | | --- | --- | --- | |  | a. | ​(–4*a*, –6*b*) | |  | b. | ​(–4*a*, 6*b*) | |  | c. | ​(4*a*, –6*b*) | |  | d. | ​(4*a*, 6*b*) | |  | e. | None of the above |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.130b | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/13/2015 10:04 AM | |

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| 30. An object is thrown upward from a height of 8 feet at a velocity of 72 feet per second.  Use the position equation *s* = –16*t*2 + *v*0*t* + *s*0 to select a function that represents the situation and select the graph of the function.  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​ *s* = –16*t*2 – 72*t* + 8  ​ | b. | ​ *s* = –16*t*2 + 72*t*  ​ | |  | c. | ​ *s* = –16*t*2 + 72*t* – 8  ​  ​ | d. | *s* = –16*t*2 + 72*t* + 8  ​ | |  | e. | ​ *s* = –16*t*2 – 72*t* – 8  ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.115 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 9/26/2014 6:17 AM | |

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| 31. An object is thrown upward from a height of 6.4 feet at a velocity of 80 feet per second.  Use the position equation *s* = –16*t*2 + *v*0*t* + *s*0 to select a function that represents the situation and select the graph of the function.  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | *s* = –16*t*2 + 80 – 6.4  ​ | b. | *s* = –16*t*2 + 80*t*  ​  ​ | |  | c. | *s* = –16*t*2 – 80*t –* 6.4  ​ | d. | *s* = –16*t*2 – 80*t*+ 6.4  ​ | |  | e. | *s* = –16*t*2 + 80*t +* 6.4  ​  ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.116 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:17 PM | | *DATE MODIFIED:* | 5/16/2015 6:34 AM | |

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| 32. An object is thrown upward from ground level at a velocity of 90 feet per second.  Use the position equation *s* = –16*t*2 + *v*0*t* + *s*0 to select a function that represents the situation and select the graph of the function.  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | *s* = –16*t*2 + 90*t*  ​  ​ | b. | *s* = –16*t*2 – 90*t*  ​ | |  | c. | *s* = 16*t*2 + 90*t*  ​  ​ | d. | *s* = 16*t*2 – 90*t*  ​  ​ | |  | e. | *s* = –16*t*2 + 90t + 8  ​  ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.117 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 5:56 AM | |

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| 33. An object is dropped from a height of 60 feet.  Use the position equation *s* = –16*t*2 + *v*0*t* + *s*0 to write a function that represents the situation and select the graph of the function.  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | *s* = 16*t*2 + ​60  ​  ​ | b. | *s* = –16*t*2 – ​60  ​  ​ | |  | c. | *s* = 16*t*2 – ​60  ​  ​ | d. | *s* = –16*t*2 + ​60  ​  ​ | |  | e. | *s* = –16*t*2 + ​60*t*  ​  ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.119 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 6:00 AM | |

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| 34. An object is dropped from a height of 15 feet.  Use the position equation *s* = –16*t*2 + *v*0*t* + *s*0 to write a function that represents the situation and select the graph of the function.  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | *s* = –16*t*2 + 15*t*  ​  ​ | b. | *s* = –16*t*2 + 15  ​  ​ | |  | c. | *s* = –16*t*2 – 15*t*  ​  ​ | d. | *s* = 16*t*2 + 15  ​  ​ | |  | e. | *s* = –16*t*2 – 15  ​  ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.120 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 6:05 AM | |

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| 35. Select the graph of the given function and determine the interval(s) for which *f*(*x*) ≥ 0.  ​  *f*(*x*) = 5 – *x*  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  ​  (∞, –5] | b. | ​  ​  ​(–∞, –5] | |  | c. | ​  ​  ​(∞, 5] | d. | ​  ​  ​(–∞, 5] | |  | e. | ​  ​  ​​(–∞, 5] |  |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.67 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 5:46 AM | |

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| 36. Select the graph of the given function and determine the interval(s) for which *f*(*x*) ≥ 0.  ​  *f*(*x*) = 16 –*x*2  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  ​  [–4, –4] | b. | ​  ​  [–4, 4] | |  | c. | ​  ​  [–4, –4] | d. | ​  ​  [4, –4] | |  | e. | ​  ​  [–4, 4] |  |  |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.69 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 6:12 AM | |

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| 37. Select the graph of the given function and determine the interval(s) for which *f*(*x*) ≥ 0.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  ​  (–∞, 2] | b. | ​  ​  [–2, ∞) | |  | c. | ​  ​  ​[–2, 2) | d. | ​  ​  [2, ∞) | |  | e. | ​  ​  [–2, ∞) |  |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.71 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 6:28 AM | |

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| 38. Select the graph of the given function and determine the interval(s) for which *f*(*x*) ≥ 0.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​  ​  *f*(*x*) > 6 for all *x.* | b. | ​  ​  *f*(*x*) < 0 for all *x.* | |  | c. | ​  ​  *f*(*x*) ≤ 0 for all *x.* | d. | ​  ​  *f*(*x*) ≥ 0 for all *x.* | |  | e. | ​  ​  *f*(*x*) > 0 for all *x.* |  |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.73 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 6:36 AM | |

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| 39. Use the graph of the function to find the domain and range of *f*.   |  |  |  | | --- | --- | --- | |  | a. | domain:   all real numbers  range:     (–∞, –1) ∪ (0, ∞) | |  | b. | domain:   (–∞, –4) ∪ (–4, ∞)  range:     (–∞, –1) ∪ (0, ∞) | |  | c. | domain:   (–∞, –1) ∪ (0, ∞)  range:      (–∞, –4) ∪ (–4, ∞) | |  | d. | domain:   all real numbers  range:     (–∞, –1] ∪ [0, ∞) | |  | e. | domain:   all real numbers  range:      all real numbers |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.12 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *LEARNING OBJECTIVES:* | PREC.LARS.16.117 - Find domain and range of graphs | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 7:47 AM | |

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| 40. Use the Vertical Line Test to determine in which of the graphs *y* is **not** a function of *x*.  ​   |  |  |  | | --- | --- | --- | |  | a. | All of the choices (A, B, C, and D) represent functions. | |  | b. | *​x*2 +  *y*2= 16  ​  ​ | |  | c. | ​  ​ | |  | d. | ​  ​ | |  | e. | ​  ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.17 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 8:51 AM | |

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| 41. Find the zeroes of the functions algebraically.  ​    ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. | ​ | |  | d. |  | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.26 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/26/2014 8:55 AM | |

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| 42. Find the zeroes of the functions algebraically.  ​    ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. | ​ | |  | d. | ​ | |  | e. | ​no real zeroes |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.31 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 4:30 AM | |

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| 43. Use a graphing utility to graph the function and find the zeroes of the function.  ​    ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. | ​ | |  | e. | no real zeroes |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.33 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 4:29 AM | |

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| 44. Determine the intervals over which the function is increasing, decreasing, or constant.     |  |  |  | | --- | --- | --- | |  | a. | ​constant on (–∞, 0)  increasing on (0, ∞)  ​ | |  | b. | increasing on (–∞, 0), (1, ∞)  descreasing on (0, 1) | |  | c. | ​​constant on (–∞, 1)  increasing on (1, ∞)  ​ | |  | d. | ​constant on (–∞, 1)  descreasing on (1, ∞)  ​ | |  | e. | ​constant on (–∞, 0)  descreasing on (0, 1)  ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.45 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/13/2015 10:11 AM | |

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| 45. Use a graphing utility to graph the function and visually determine the intervals over which the function is increasing, decreasing, or constant.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | ​increasing on (–∞, ∞) | |  | b. | descreasing on (–∞, 1)  increasing on (1, ∞) | |  | c. | ​increasing on (–∞, 1)  descreasing on (1, ∞) | |  | d. | ​descreasing on (–∞, ∞) | |  | e. | descreasing on (1, 1)  increasing on (1, ∞) |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.52 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/13/2015 10:28 AM | |

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| 46. Use a graphing utility to graph the function and approximate (to two decimal places) any relative minimum or relative maximum values.   |  |  |  | | --- | --- | --- | |  | a. | relative maximum:  (2.58, 0.39)  relative minimum:  (7.27, –1.72) | |  | b. | relative maximum:  (0.39, 2.58)  relative minimum:  (–1.72, 7.27) | |  | c. | relative maximum:  (–1.72, 7.27)  relative minimum:  (0.39, 2.58) | |  | d. | relative maximum:  (7.27, –1.72)  relative minimum:  (2.58, 0.39) | |  | e. | relative maximum:  (2.58, 28.33)  relative minimum:  (7.27, 478.41) |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.50 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 6:47 AM | |

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| 47. Graph the function and determine the interval(s) for which *f* (*x*) ≥ 0.   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. |  | |  | d. | {–2} | |  | e. |  |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.70 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/14/2015 8:57 AM | |

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| 48. Determine whether the function is even, odd, or neither.  ​  ​  ​               |  |  |  | | --- | --- | --- | |  | a. | neither | |  | b. | even | |  | c. | odd |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.95 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *LEARNING OBJECTIVES:* | PREC.LARS.16.121 - Identify even and odd functions | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 7:26 AM | |

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| 49. Write the height *h* of the rectangle as a function of *x*.   |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.103 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/30/2014 9:50 AM | |

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| 50. ​Use the position equation *s* = –16*t*2 + *v*0*t* + *s*0  to write a function that represents the situation and give the average velocity of the object from time *t*1 to time *t*2. An object is thrown upward from a height of 38 feet at a velocity of 84 feet per second.  *t*1 = 1, *t*2 = 3   |  |  |  | | --- | --- | --- | |  | a. | ​*s* = –16*t*2 + 38*t* + 84; avg. velocity = 79 ft/s | |  | b. | ​*s* = –16*t*2 + 84*t* + 38; avg. velocity = 125 ft/s | |  | c. | ​*s* = –16*t*2 + 38*t* + 84; avg. velocity = –26 ft/s | |  | d. | ​*s* = –16*t*2 + 84*t* + 38; avg. velocity = 20 ft/s | |  | e. | ​*s* = –16*t*2 + 84*t* + 38; avg. velocity = 40 ft/s |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 2.3.115 | | *QUESTION TYPE:* | Multiple Choice | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 4/17/2015 4:08 AM | | *DATE MODIFIED:* | 4/17/2015 4:38 AM | |

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| 51. Find the graph of the equation.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ​ | b. | ​ | |  | c. | ​ | d. | ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 9/29/2014 9:20 AM | |

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| 52. Tell where the function is decreasing.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. |  | |  | c. | always increasing | |  | d. | always constant | |  | e. | always decreasing |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/16/2015 6:46 AM | |

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| 53. The graph of a function is sketched below.  ​  ​  Determine the interval on which the function is decreasing.  ​   |  |  |  | | --- | --- | --- | |  | a. | (–∞, –3] ∩ [–1, ∞) | |  | b. | ​[–3, –1] | |  | c. | ​[–1, –1]  ​ | |  | d. | ​[1, 3]  ​ | |  | e. | (–∞, –3] ∩ [–1, ∞)  ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/16/2015 6:51 AM | |

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| 54. Tell where the function is decreasing.  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | always increasing | |  | b. | always decreasing | |  | c. | (0, ∞) | |  | d. | always constant | |  | e. | (–∞, 0) |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 5/14/2015 9:36 AM | |

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| 55. Graph the piecewise-defined function.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. |  | b. |  | |  | c. |  | d. |  |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 4:59 AM | |

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| 56. Graph the function.  ​  ​   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. |  | b. | ​ | |  | c. | ​ | d. | ​ |  |  |  | | --- | --- | | *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 8:43 AM | |

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| 57. The graph of the function is sketched as follows:  ​  ​  Determine the interval where the function is increasing.   |  |  | | --- | --- | | *ANSWER:* |  | | *POINTS:* | 1 | | *QUESTION TYPE:* | Subjective Short Answer | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:18 PM | | *DATE MODIFIED:* | 10/1/2014 10:01 AM | |