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| 1. Evaluate each function. Round your answers to four decimal places.  ​  tan15.7° and cot74.3°  ​   |  |  |  | | --- | --- | --- | |  | a. | 0.4811 and 0.4811 | |  | b. | 0.3311 and 0.3311 | |  | c. | 0.2811 and 0.2811 | |  | d. | 0.3811 and 0.3811 | |  | e. | 0.4311 and 0.4311 |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.47 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 3:41 AM | |

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| 2. Evaluate each function. Round your answers to four decimal places.  ​  sin22.3° and csc22.3°  ​   |  |  |  | | --- | --- | --- | |  | a. | 0.5795 and 2.8354 | |  | b. | 0.3795 and 2.6354 | |  | c. | 0.4795 and 2.7354 | |  | d. | 0.4295 and 2.6854 | |  | e. | 0.5295 and 2.7854 |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.48 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 3:42 AM | |

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| 3. Evaluate each function. Round your answers to four decimal places.  ​  cos17°36' and sin67°23'  ​   |  |  |  | | --- | --- | --- | |  | a. | 1.0032 and 0.9731 | |  | b. | 1.0532 and 1.0231 | |  | c. | 1.1532 and 1.1231 | |  | d. | 1.1032 and 1.0731 | |  | e. | 0.9532 and 0.9231 |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.49 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 3:44 AM | |

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| 4. Evaluate each function. Round your answers to four decimal places.  ​  sec48°38' and csc31°57'  ​   |  |  |  | | --- | --- | --- | |  | a. | 1.7131 and 2.0897 | |  | b. | 1.6131 and 1.9897 | |  | c. | 1.5631 and 1.9397 | |  | d. | 1.5131 and 1.8897 | |  | e. | 1.6631 and 2.0397 |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.50 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 3:53 AM | |

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| 5. Evaluate each function. Round your answers to four decimal places.  ​   and  ​   |  |  |  | | --- | --- | --- | |  | a. | 4.7046 and 0.2126 | |  | b. | 4.7546 and 0.2626 | |  | c. | 4.8546 and 0.3626 | |  | d. | 4.8046 and 0.3126 | |  | e. | 4.9046 and 0.4126 |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.51 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 5/15/2015 6:42 AM | |

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| 6. Evaluate each function. Round your answers to four decimal places.  ​  sec0.74 and cos0.74  ​   |  |  |  | | --- | --- | --- | |  | a. | 1.4042 and 0.7885 | |  | b. | 1.5542 and 0.9385 | |  | c. | 1.3542 and 0.7385 | |  | d. | 1.4542 and 0.8385 | |  | e. | 1.5042 and 0.8885 |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.52 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 4:00 AM | |

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| 7. Evaluate each function. Round your answers to four decimal places.  ​  csc3 and  ​   |  |  |  | | --- | --- | --- | |  | a. | 7.0862 and 0.2027 | |  | b. | 7.1862 and 0.3027 | |  | c. | 7.2362 and 0.3527 | |  | d. | 7.1362 and 0.2527 | |  | e. | 7.2862 and 0.4027 |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.53 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 4:03 AM | |

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| 8. Evaluate each function. Round your answers to four decimal places.  ​   and  ​   |  |  |  | | --- | --- | --- | |  | a. | 1.1998 and 0.4463 | |  | b. | 1.2998 and 0.5463 | |  | c. | 1.1498 and 0.3963 | |  | d. | 1.0998 and 0.3463 | |  | e. | 1.2498 and 0.4963 |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.54 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 4:09 AM | |

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| 9. Find the exact values of the six trigonometric functions of the angle *θ* shown in the figure.  (Use the Pythagorean Theorem to find the third side of the triangle.)    ​   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | |  |  | | --- | --- | | sin *θ* = | csc *θ* = | | cos *θ* = | sec *θ* = | | tan *θ* = | cot *θ* = |                   ​ | |  | b. | |  |  | | --- | --- | | sin *θ*= ​ | csc *θ*= ​ | | cos *θ*= ​ | sec *θ*= ​ | | tan *θ*= ​ | cot *θ*= ​ |   ​ | |  | c. | |  |  | | --- | --- | | sin *θ*= ​ | csc *θ*= ​ | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | d. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ* = |   ​ | |  | e. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |                   ​ |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.5 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 7:26 AM | |

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| 10. Find the exact values of the six trigonometric functions of the angle θ shown in the figure.  (Use the Pythagorean Theorem to find the third side of the triangle.)    ​   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | b. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | c. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | d. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | e. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.6 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 7:27 AM | |

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| 11. Find the exact values of the six trigonometric functions of the angle *θ* shown in the figure.  (Use the Pythagorean Theorem to find the third side of the triangle.)     |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | b. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | c. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | d. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | e. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.7 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/18/2014 7:45 AM | |

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| 12. Find the exact values of the six trigonometric functions of the angle *θ* for each of the two triangles.    ​   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | b. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | c. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | d. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | e. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.9 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/20/2014 2:26 AM | |

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| 13. Find the exact values of the six trigonometric functions of the angle *θ* for the triangle.    ​   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | ​   |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | b. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | c. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | d. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | e. | |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= | |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.10 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/20/2014 3:29 AM | |

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| 14. Select a right triangle corresponding to the trigonometric function of the acute angle *θ*. Use the Pythagorean Theorem to determine the third side and then find the other five trigonometric functions of *θ*.  ​  tan *θ* =  ​  ​   |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | ​   |  |  | | --- | --- | | sin *θ* = | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | b. | ​   |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | c. | ​   |  |  | | --- | --- | | sin *θ*= | csc *θ* = | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | d. | ​   |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ | |  | e. | ​   |  |  | | --- | --- | | sin *θ*= | csc *θ*= | | cos *θ*= | sec *θ*= | | tan *θ*= | cot *θ*= |   ​ |  |  |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.13 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/20/2014 4:39 AM | |

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| 15. Construct an appropriate triangle to complete the table.   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sin | 45° |  |  |   ​         |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sin | 45 | ​ | ​ | | |  | b. | ​  ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sin | 45 | ​ | ​ | | |  | c. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sin | 45 | 0 | 0 | | |  | d. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sin | 45 |  | ​1 | | |  | e. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sin | 45 | ​ | ​ | |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.21 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/20/2014 6:32 AM | |

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| 16. Construct an appropriate triangle to complete the table.   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cos | 30° |  |  |   ​         |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cos | 30 | ​ | ​ |   ​ | |  | b. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cos | 30 | ​ | ​ |   ​ | |  | c. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cos | 30 | 0 | 0 |   ​ | |  | d. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cos | 30 |  | ​1 |   ​ | |  | e. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cos | 30 | ​ | ​ |   ​ |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.22 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 11/20/2014 6:44 AM | | *DATE MODIFIED:* | 11/21/2014 2:28 AM | |

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| 17. Construct an appropriate triangle to complete the table.   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sec | ​ | ​ | ​ |   ​   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sec | ​45° | ​ | ​ | | |  | b. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sec | ​90° | ​ | ​Not defined | | |  | c. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sec | ​60° | ​ | ​2 | | |  | d. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sec | ​0° | ​ | ​1 | | |  | e. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | sec | 30​° | ​ | ​ | |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.23 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/21/2014 2:33 AM | |

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| 18. Construct an appropriate triangle to complete the table.   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | tan | ​ | ​ | ​ |   ​   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | tan | ​90° | ​ | Not defined​ | | |  | b. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | tan | ​45° | ​ | ​1 | | |  | c. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | tan | ​60° | ​ | ​ | | |  | d. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | tan | ​0° | ​ | ​0 | | |  | e. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | tan | 30​° | ​ | ​ | |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.23 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 11/21/2014 2:26 AM | | *DATE MODIFIED:* | 11/25/2014 12:50 AM | |

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| 19. Construct an appropriate triangle to complete the table.   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cot | ​ | ​ | ​ |   ​   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cot | ​30° | ​ | ​ | | |  | b. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cot | ​45° | ​ | ​1 | | |  | c. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cot | 90​° | ​ | ​0 | | |  | d. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cot | ​0° | ​ | Not defined | | |  | e. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | cot | 60​° | ​ | ​ | |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.25 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 11/25/2014 12:38 AM | | *DATE MODIFIED:* | 11/25/2014 12:52 AM | |

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| 20. Construct an appropriate triangle to complete the table.   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | csc | ​ | ​ | ​ |   ​   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | csc | ​30° | ​ | 2​ | | |  | b. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | csc | ​90° | ​ | ​1 | | |  | c. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | csc | ​45° | ​ | ​ | | |  | d. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | csc | ​0° | ​ | ​0 | | |  | e. | ​   |  |  |  |  | | --- | --- | --- | --- | | *Function* | *θ*(*deg*) | *θ(rad)* | *Function Value* | | csc | 30​° | ​ | ​ | |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.26 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 11/25/2014 12:53 AM | | *DATE MODIFIED:* | 5/15/2015 6:18 AM | |

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| 21. Use the given function value(s), and trigonometric identities (including the cofunction identities), to find the indicated trigonometric functions.  ​sin 30° = , cos 30° =  ​  ​sin 60° and cos 60°   |  |  |  | | --- | --- | --- | |  | a. | ​sin 60° = 2 and cos 60° = | |  | b. | ​sin 60° =  and cos 60° = | |  | c. | ​sin 60° =  and cos 60° = | |  | d. | ​sin 60° =  and cos 60° = | |  | e. | ​sin 60° =  and cos 60° = 2 |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.31 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/25/2014 3:37 AM | |

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| 22. Use the given function value(s), and trigonometric identities (including the cofunction identities), to find the indicated trigonometric functions.  ​  ​sin 90° = 1, tan 90° = Not defined  sin 0° and tan  0°  ​   |  |  |  | | --- | --- | --- | |  | a. | ​sin 0° = 0 and tan 0° = 0 | |  | b. | sin 0° = 1 and tan 0° = 1 | |  | c. | ​sin 0° = Not defined  and tan 0° = Not defined | |  | d. | ​sin 0° = Not defined  and tan 0° = 1 | |  | e. | ​sin 0° = 1 and tan 0° = Not defined |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.32 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/25/2014 4:12 AM | |

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| 23. Use the given function value(s), and trigonometric identities (including the cofunction identities), to find the indicated trigonometric functions.  ​  ​  sec *θ* and csc(90° - *θ*)  ​   |  |  |  | | --- | --- | --- | |  | a. | ​ and | |  | b. | and | |  | c. | ​ and | |  | d. | ​ and | |  | e. | ​ and |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.33 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/25/2014 5:25 AM | |

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| 24. Use the given function value(s), and trigonometric identities (including the cofunction identities), to find the indicated trigonometric functions.  ​  ​  cos *θ*  ​   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.34 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/25/2014 5:15 AM | |

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| 25. Use the given function value(s), and trigonometric identities (including the cofunction identities), to find the indicated trigonometric functions.  ​  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | ​ and | |  | b. | ​ and | |  | c. | and | |  | d. | ​ and | |  | e. | ​ and |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.35 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/25/2014 6:21 AM | |

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| 26. Use the given function value(s), and trigonometric identities (including the cofunction identities), to find the indicated trigonometric functions.  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | and | |  | b. | ​ and | |  | c. | ​ and | |  | d. | ​ and | |  | e. | ​ and |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.36 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/25/2014 5:14 AM | |

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| 27. Find the values of *θ* in degrees and radians without the aid of a calculator.  ​sin *θ* = 1 and csc *θ* = 1  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 90° = | |  | b. | ​30° = | |  | c. | ​0° = 0 | |  | d. | ​60° = | |  | e. | ​45° = |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.55 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/25/2014 7:40 AM | |

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| 28. Find the values of *θ* in degrees and radians without the aid of a calculator.  cos *θ* = 0 and tan *θ* = Not defined  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 90° = | |  | b. | ​60° = | |  | c. | ​0° = 0 | |  | d. | ​30° = | |  | e. | ​45° = |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.56 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 11/25/2014 6:59 AM | | *DATE MODIFIED:* | 11/25/2014 7:31 AM | |

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| 29. Find the values of *θ* in degrees and radians without the aid of a calculator.  sec *θ* =  and cot *θ* = 1  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 45° = | |  | b. | ​90° = | |  | c. | ​0° = 0 | |  | d. | ​60° = | |  | e. | ​30° = |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.57 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 11/25/2014 7:20 AM | | *DATE MODIFIED:* | 11/25/2014 7:27 AM | |

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| 30. You are skiing down a mountain with a vertical height of 1250 feet. The distance from the top of the mountain to the base is 2500 feet. What is the angle of elevation from the base to the top of the mountain?  ​   |  |  |  | | --- | --- | --- | |  | a. | 60° = | |  | b. | 30° = | |  | c. | 0° = 0 | |  | d. | 90° = | |  | e. | 45° = |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.67 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 12:48 AM | |

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| 31. A biologist wants to know the width *w* of a river so that instruments for studying the pollutants in the water can be set properly. From point *A* the biologist walks downstream  feet and sights to point *C* (see figure). From this sighting, it is determined that *θ* = 54°. How wide is the river?  ​  (Round your answer to three decimal places.)  ​   |  |  |  | | --- | --- | --- | |  | a. | 212.693 | |  | b. | 197.693 | |  | c. | 207.693 | |  | d. | 202.693 | |  | e. | 192.693 |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.68 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 5/15/2015 6:44 AM | |

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| 32. A guy wire runs from the ground to a cell tower. The wire is attached to the cell tower  feet above the ground. The angle formed between the wire and the ground is 43° (see figure). How long is the guy wire.  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 166.6 ft | |  | b. | ​146.6 ft | |  | c. | ​156.6 ft | |  | d. | ​161.6 ft | |  | e. | ​151.6 ft |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.69 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 1:04 AM | |

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| 33. In traveling across flat land, you notice a mountain directly in front of you. Its angle of elevation (to the peak) is 3.5°. After you drive  miles closer to the mountain, the angle of elevation is 9°. Approximate the height of the mountain. (Round your answer upto one decimal place.)  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 10.3 mi | |  | b. | 2.3 mi | |  | c. | 4.3 mi | |  | d. | 8.3 mi | |  | e. | 6.3 mi |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.70 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 1:07 AM | |

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| 34. A tapered shaft has a diameter of  centimeters at the small end and is 15 centimeters long (see figure). The taper is 3°. Find the diameter *d* of the large end of the shaft. (Round your answer to two decimal places.)  ​  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | 10.57 cm | |  | b. | 14.57 cm | |  | c. | 12.57 cm | |  | d. | 18.57 cm | |  | e. | 16.57 cm |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.72 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 1:27 AM | |

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| 35. Use a compass to sketch a quarter of a circle of radius 10 centimeters. Using a protractor,  construct an angle of  in standard position (see figure). Drop a perpendicular line from the point of intersection of the terminal side of the angle and the arc of the circle. By actual measurement, calculate the coordinates  of the point of intersection and use these measurements to approximate the six trigonometric functions of a angle. (Round your answer to two decimal places.)  ​  ​   |  |  |  | | --- | --- | --- | |  | a. | sin10° ≈ 0.98, cos10° ≈ 0.17, tan10° ≈ 5.76,  csc10° ≈ 0.18, sec10° ≈ 1.02, cot10° ≈ 5.67 | |  | b. | sin10° ≈ 5.67, cos10° ≈ 1.02, tan10° ≈ 5.76,  csc10° ≈ 0.18, sec10° ≈ 0.98, cot10° ≈ 5.67  ​ | |  | c. | sin10° ≈ 0.17, cos10° ≈ 0.98, tan10° ≈ 0.18,  csc10° ≈ 5.76, sec10° ≈ 1.02, cot10° ≈ 5.67  ​ | |  | d. | sin10° ≈ 0.18, cos10° ≈ 0.98, tan10° ≈ 0.17,  csc10° ≈ 10, sec10° ≈ 0.98, cot10° ≈ 5.76  ​ | |  | e. | sin10° ≈ 0.17, cos10° ≈ 0.98, tan10° ≈ 0.18,  csc10° ≈ 5.76, sec10° ≈ 5.67, cot10° ≈ 1.02 |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.73 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 2:24 AM | |

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| 36. A 20-meter line is used to tether a helium-filled balloon. Because of a breeze, the line makes an angle of approximately 85° with the ground. Use a trigonometric function to write an equation involving the unknown quantity.  ​   |  |  |  | | --- | --- | --- | |  | a. | (where *h* is height.) | |  | b. | (where *h* is height.) | |  | c. | (where *h* is height.) | |  | d. | (where *h* is height.) | |  | e. | (where *h* is height.) |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.74(b) | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 3:18 AM | |

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| 37. A 50-meter line is used to tether a helium-filled balloon. Because of a breeze, the line makes an angle of approximately 55° with the ground. What is the height of the balloon? (Round the answer to one decimal place.)  ​   |  |  |  | | --- | --- | --- | |  | a. | 45 m | |  | b. | 41 m | |  | c. | 43 m | |  | d. | 49 m | |  | e. | 47 m |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.74(c) | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 3:29 AM | |

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| 38. A 10-meter line is used to tether a helium-filled balloon. Complete the table, which shows the heights (in meters) of the balloon for decreasing angle measures . (Round your answers to one decimal places.)   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Angle, *θ* | 50° | 40° | 30° | 20° | 10° | | Height |  |  |  |  |  |   ​   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Angle, *θ* | 70° | 60° | 50° | 40° | 30° | | Height |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Angle,*θ* | 50° | 40° | 30° | 20° | 10° | | Height | ​5.7 | ​6.4 | 5​ | ​3.4 | 1.7​ |   ​ | |  | b. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Angle,*θ* | 50° | 40° | 30° | 20° | 10° | | Height | ​7.7 | ​6.4 | ​5 | ​3.4 | 1.7​​ |   ​ | |  | c. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Angle,*θ* | 50° | 40° | 30° | 20° | 10° | | Height | 4.7​ | ​6.4 | ​5 | 3.4​ | ​1.7​ |   ​ | |  | d. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Angle,*θ* | 50° | 40° | 30° | 20° | 10° | | Height | ​3.7 | 6.4​ | ​5 | ​3.4 | ​1.7​ |   ​ | |  | e. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Angle,*θ* | 50° | 40° | 30° | 20° | 10° | | Height | ​6.7 | ​6.4 | ​5 | ​3.4 | 1.7​​ |   ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.74e | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 3:50 AM | |

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| 39. Use a graphing utility to complete the table.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 20° | 30° | 40° | 50° | 60° | | cos *θ* |  |  |  |  |  | | sin (90°– *θ*) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 20° | 30° | 40° | 50° | 60° | | cos*θ* | 0.94 | 0.5 | 0.77 | 0.87 | 0.5 | | sin (90°–*θ*) | 0.94 | 0.5 | 0.77 | 0.87 | 0.5 |   ​  ​ | |  | b. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 20° | 30° | 40° | 50° | 60° | | cos*θ* | 0.5 | 0.64 | 0.77 | 0.87 | 0.94 | | sin (90°–*θ*) | 0.94 | 0.87 | 0.77 | 0.64 | 0.5 |   ​  ​ | |  | c. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 20° | 30° | 40° | 50° | 60° | | cos*θ* | 0.94 | 0.87 | 0.77 | 0.64 | 0.5 | | sin (90°–*θ*) | 0.94 | 0.87 | 0.77 | 0.64 | 0.5 |   ​ | |  | d. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 20° | 30° | 40° | 50° | 60° | | cos*θ* | 0.94 | 0.87 | 0.77 | 0.64 | 0.5 | | sin (90°–*θ*) | 0.5 | 0.64 | 0.77 | 0.87 | 0.94 |   ​ | |  | e. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 20° | 30° | 40° | 50° | 60° | | cos*θ* | 0 | 0.87 | 0.77 | 0.64 | 0.5 | | sin (90°–*θ*) | 0 | 0.87 | 0.77 | 0.64 | 0.5 | |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.85 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 4:59 AM | |

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| 40. Complete the table.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 0.8 | 0.9 | 1 | 1.1 | 1.2 | | sin *θ* |  |  |  |  |  |   (Round your answer to four decimal places.)   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | a. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 0.8 | 0.9 | 1 | 1.1 | 1.2 | | sin*θ* | 0.7174 | ​0.7833 | ​0.8415 | 0.8912​ | 0.932​ |   ​ | |  | b. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 0.8 | 0.9 | 1​ | 1.1​ | 1.2​ | | sin*θ* | ​0 | ​1 | 2​ | ​3 | ​4 |   ​ | |  | c. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 0.8 | 0.9 | 1​ | 1.1 | 1.2​ | | sin*θ* | 0.932​ | ​0.8912 | ​0.8415 | ​0.7833 | 0.7174​ |   ​ | |  | d. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 0.8 | 0.9 | 1​ | 1.1​ | 1.2 | | sin*θ* | 0.7174​ | 0.7174​ | 0.8415​ | ​0.7174 | 0.932​ |   ​ | |  | e. | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *θ* | 0.8​ | 0.9 | 1 | 1.1 | 1.2 | | sin*θ* | 0.8​ | 0.9​ | ​1 | 1.1​ | 1.2​ | |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.83 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 5:52 AM | |

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| 41. Find the exact value of csc *θ*, using the triangle shown in the figure below, if  and .   |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.6 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 6:09 AM | |

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| 42. If *θ* is an acute angle and , determine sin *θ*.   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.13 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 6:22 AM | |

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| 43. Given sin 30° =  and cos 30° = , determine the following:  ​cot 30°   |  |  |  | | --- | --- | --- | |  | a. | ​cot 30° = | |  | b. | undefined | |  | c. | ​cot 30° = | |  | d. | ​cot 30° = | |  | e. | ​cot 30° = 2 |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.31 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/27/2014 7:28 AM | |

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| 44. Using trigonometric identities, determine which of the following is equivalent to the following expression.  ​  tan *θ* + cot *θ*  ​   |  |  |  | | --- | --- | --- | |  | a. | ​1 | |  | b. | ​csc *θ*sec *θ* | |  | c. | ​ *θ* +  *θ* | |  | d. | ​cos *θ* + sec *θ* | |  | e. | ​sec *θ* + csc *θ* |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.37 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/28/2014 2:40 AM | |

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| 45. Use a calculator to evaluate tan 49°34´. Round your answer to four decimal places.   |  |  |  | | --- | --- | --- | |  | a. | –1.3283 | |  | b. | 0.0423 | |  | c. | –0.8403 | |  | d. | 1.1643 | |  | e. | 1.1736 |  |  |  | | --- | --- | | *ANSWER:* | e | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.47a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 5/15/2015 5:43 AM | |

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| 46. Use a calculator to evaluate . Round your answer to four decimal places.   |  |  |  | | --- | --- | --- | |  | a. | –1.8382 | |  | b. | –24.0997 | |  | c. | 0.3090 | |  | d. | 3.2361 | |  | e. | –0.0415 |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.51a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/28/2014 2:51 AM | |

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| 47. If , find the value of *θ* in degrees  without the aid of a calculator.   |  |  |  | | --- | --- | --- | |  | a. | *θ* = 30° | |  | b. | ​*θ* = 45° | |  | c. | ​​*θ* = 90° | |  | d. | ​​*θ* = 75° | |  | e. | ​​*θ* = 15° |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.55a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/28/2014 6:30 AM | |

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| 48. Using the figure below, if *θ*= 33° and *y*= 9, determine the exact value of *x*.   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.61 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/28/2014 6:45 AM | |

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| 49. Using the figure below, if *θ* = 20° and *y* = 16, determine the exact value of *r*.   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.62 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/28/2014 6:57 AM | |

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| 50. Will Barrow wanted to know how tall the flagpole was in front of his school. To find its height, he drove a stake into the ground at the tip of the flagpole's shadow and recorded the angle of elevation at two different times during the day. He then measured the distance between the stakes. Will's data is below:   |  |  |  | | --- | --- | --- | | Stake | Time | Angle of Elevation | | A | 2:00 PM | 82° | | B | 3:00 PM | ​61° | | Distance between stakes A & B | 10 feet | |   Determine the height of the flagpole. Round your answer to nearest foot.   |  |  |  | | --- | --- | --- | |  | a. | 22 feet | |  | b. | 24 feet | |  | c. | 20 feet | |  | d. | 26 feet | |  | e. | 18 feet |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 6.2.69a | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/28/2014 7:59 AM | |

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| 51. Find the exact value of csc *θ*, using the triangle shown in the figure below, if *a* = 3 and *b* = 4.   |  |  |  | | --- | --- | --- | |  | a. |  | |  | b. | ​ | |  | c. | ​ | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 11/28/2014 8:06 AM | |

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| 52. Given  and , determine the following:  ​sec 30°  ​   |  |  |  | | --- | --- | --- | |  | a. | ​sec 30° = 1 | |  | b. | ​sec 30° = | |  | c. | ​sec 30° = | |  | d. | ​sec 30° = | |  | e. | undefined |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 5/15/2015 6:48 AM | |

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| 53. Given  and tan *θ* = 3, determine the following.  ​  cos(90° – *θ*)  ​   |  |  |  | | --- | --- | --- | |  | a. | ​cos(90° – *θ*) = | |  | b. | ​cos(90° – *θ*) = | |  | c. | ​cos(90° – *θ*) = | |  | d. | ​cos(90° – *θ*) = 3 | |  | e. | undefined |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 12/1/2014 1:09 AM | |

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| 54. Using the figure below, if *θ* = 26° and *y* = 6, determine the exact value of *x*.   |  |  |  | | --- | --- | --- | |  | a. | ​ | |  | b. | ​ | |  | c. |  | |  | d. | ​ | |  | e. | ​ |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 12/1/2014 1:15 AM | |

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| 55. Use a calculator to evaluate tan 68°23'. Round your answer to four decimal places.   |  |  |  | | --- | --- | --- | |  | a. | 2.5236 | |  | b. | 2.5040 | |  | c. | –1.2222 | |  | d. | –0.8980 | |  | e. | 0.7269 |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 5/15/2015 5:41 AM | |

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| 56. If , find the value of *θ* in degrees  without the aid of a calculator.   |  |  |  | | --- | --- | --- | |  | a. | *​θ* = 45° | |  | b. | ​*θ* = 30° | |  | c. | ​*θ* = 15° | |  | d. | ​*θ* = 90° | |  | e. | ​*θ* = 75° |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *QUESTION TYPE:* | Multi-Mode (Multiple choice) | | *HAS VARIABLES:* | True | | *DATE CREATED:* | 6/10/2014 4:23 PM | | *DATE MODIFIED:* | 12/1/2014 1:20 AM | |