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| 1. A roof has a rise of 5 feet for every horizontal change of 7 feet (see figure). Find the inclination of the roof. Round your answers to one decimal place.  ​  ​  ​ |

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| 2. Graphically estimate the *x*- and *y*-intercepts of the graph.  ​  ​  ​ |

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| 3. The parent function  is related to *g*. Describe the sequence of transformations from  *f* to *g*.  ​  ​ |

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| 4. From the graph of the quadratic function , determine the equation of the axis of symmetry. |

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| 5. Find the distance between the point and the line. Round your answer to four decimal places.    ​ |

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| 6. Write an equation for the function that is described by the following characteristics.  The shape of , but moved eight units down, two units to the left, and then reflected in the *x*-axis. |

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| 7. Find the inclination *Θ* (in degrees) of the line with a slope of *m*. Round your answer to one decimal places.  ​  ​ |

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| 8. Find all real value of *x* such that .  ​  ​ |

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| 9. Evaluate  if .  ​ |

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| 10. Use algebraic tests to check the following for symmetry with respect to the axes and the origin.  ​  ​ |

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| 11. Select the graph of *g*.  ​  ​ |

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| 12. Find the value(s) of *x* for which .  ​    ​ |

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| 13. A rectangle is bounded by the *x*-axis and the semicircle  (see figure). Select the area *A* of the rectangle as a function of *x,* and determine the domain of the function.  ​  ​ |

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| 14. Determine the quadrant(s) in which (*x*, *y*) is located so that the condition(s) is (are) satisfied.  ​  *x* > 3 and *y* < 0  ​ |

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| 15. Find the angle  (in radians and degrees) between the lines. Round your answer to four decimal places for radians and round your answer to one decimal places for degree.  ​  ​ |

**Answer Key**

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| 1. |

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| 2. *x*-intercept: (1, 0)  *y*-intercept: (0, 2) |

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| 3. Horizontal shift three units to the right. |

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| 4. |

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| 5. |

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| 6. |

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| 7. |

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| 8. *x*= |

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| 9. |

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| 10. Symmetric with respect to the *x*-axis. |

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| 11. ​ |

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| 12. *x=* –3, 6 |

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| 13. , |

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| 14. Quadrant IV |

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| 15. |