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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.  |