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| 1.   Souvenir hats, T-shirts, and jackets are sold at a rock concert. Two hats, two T-shirts, and one jacket cost $141. Three hats, three T-shirts, and two jackets cost $239. One hat, three T-shirts, and three jackets cost $262. Find the prices of the individual items. |
| |  | | --- | | **A.**Hats: $14; T-shirts: $27; jackets: $54 | | **B.**Hats: $14; T-shirts: $28; jackets: $55 | | **C.**Hats: $16; T-shirts: $27; jackets: $55 | | **D.**Hats: $16; T-shirts: $25; jackets: $56 | |

https://my.pennfoster.com/exams/images/350402RR_Q15_stem.png

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| 2.   Find the domain of the function shown. Write the answer in interval notation. |
| |  | | --- | | **A.**(–20, 3) | | **B.**(–∞, 3) | | **C.**(–∞, –20) ∪ (–20, ∞) | | **D.**(–∞, 3) ∪ (3, ∞) | |

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| 3.   Which of the following is a solution of 4*x* + 2*y* ≤ 6? |
| |  | | --- | | **A.**(1, 0) | | **B.**(0, 4) | | **C.**(5, 7) | | **D.**(5, 0) | |

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| 4.   If *z*(*t*) = 2*t*2 + 7*t* – 4, find *z*(–2) and *z*(7). |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.***z*(–2) = –2; *z*(7) = 241 | | **B.***z*(–2) = –10; *z*(7) = 143 | | **C.***z*(–2) = 11; *z*(7) = 101 | | **D.***z*(–2) = –26; *z*(7) = 143 | |  |  |  |  |  |  |  |  |  |

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| 5.   If ƒ(*x*) = 15*x* + 7 and *g*(*x*) = *x*2 – 5*x*, find (ƒ + *g*)(*x*). |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.**(ƒ + *g*)(*x*) = 15*x*2 – 75*x* +7 | | **B.**(ƒ + *g*)(*x*) = 15*x*3 – 68*x*2 – 35*x* | | **C.**(ƒ + *g*)(*x*) = 15*x* + *g* + 7 | | **D.**(ƒ + *g*)(*x*) = *x*2 + 10*x* +7 | |  |  |  |  |  |  |  |  |  |
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https://my.pennfoster.com/exams/images/350402RR_Q5_stem.png

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| 6.   Find the domain. Write the answer in interval notation. |
| |  | | --- | | **A.**(–∞, ∞) | | **B.**(–∞, –3) ∪ (–3, ∞) | | **C.**[–∞, –3] ∪ (–3, ∞) | | **D.**[–∞, –3] ∪ [–3, ∞) | |

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| 7.   A rectangle has a perimeter of 24 inches. The length is 4 inches longer than the width. Find the dimensions of the rectangle. |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.**2 inches by 6 inches | | **B.**5 inches by 9 inches | | **C.**4 inches by 8 inches | | **D.**5 inches by 11 inches | |  |  |  |  |  |  |  |  |  |

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| 8.   Solve the system using the addition method. –5*x* – 9*y* = 28 –4*x* + 5*y* = –2 |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.**(–11, 3) | | **B.**(7, –4) | | **C.**(–2, –2) | | **D.**(7, 6) | |  |  |  |  |  |  |  |  |  |

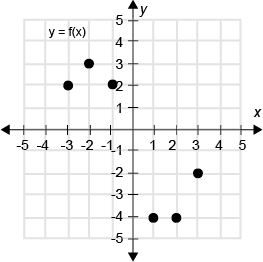
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| 9.   Are the two equations –6 + *y* = 2*x* and 2*y* – 4*x* = 12 dependent? |
| |  | | --- | | **A.**No, because they aren't parallel. | | **B.**Yes, because they have the same graph. | | **C.**No, because the equations aren't written the same. | | **D.**Yes, because both are equations of a straight line. | |

https://my.pennfoster.com/exams/images/350402RR_Q2_stem.png

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| 10.   The table shown describes the temperature (*y*) inside an oven, in degrees, *x* minutes after it was turned on. What's the domain of this relation? |
| |  | | --- | | **A.**[72, 425] | | **B.**(72, 133, 186, 237, 285, 333, 379, 425) | | **C.**{0, 1, 2, 3, 4, 5, 6, 7, 8, 9} | | **D.**[0, 9] | |

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| 11.   Determine whether the function shown is *constant, linear, quadratic,* or none of these. https://my.pennfoster.com/exams/images/350402RR_Q9_stem.png |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.**None of these | | **B.**Linear | | **C.**Quadratic | | **D.**Constant | |  |  |  |  |  |  |  |  |  |

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| 12.   To solve a system of equations using the matrix method, use elementary row operations to transform the augmented matrix into one with \_\_\_\_\_\_\_. Then, proceed back to substitute. |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.**zeros below the diagonal | | **B.**Gaussian elimination | | **C.**an inverse | | **D.**zeros in its final column | |  |  |  |  |  |  |  |  |  |



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| 13.   For what value(s) of *x* is ƒ(*x*) = 3? |
| |  | | --- | | **A.***x* = –3 | | **B.***x* = –2 | | **C.***x* = 3 | | **D.***x* = 2 | |

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| 14.   If *m*(*x*) = *x*3 and *n*(*x*) = √ 6 + *x* , find the function value, if possible. (*m* – *n*)(–5) |
| |  | | --- | | **A.**124 | | **B.**–124 | | **C.**Not a real number | | **D.**–126 | |

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| 15.   Graph the feasible region. *x* + *y* ≤ 3 *x* ≥ 1, *y* ≥ 0 |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.** https://my.pennfoster.com/exams/images/350402RR_Q41_shape-right.png | | **B.** https://my.pennfoster.com/exams/images/350402RR_Q41_shape-left.png | | **C.** https://my.pennfoster.com/exams/images/350402RR_Q41_triangle-right.png | | **D.** https://my.pennfoster.com/exams/images/350402RR_Q41_triangle-left.png | |  |  |  |  |  |  |  |  |  |

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| 16.   Find the domain of the function shown. Write your answer in interval notation.  *g*(*y*) = √ *y* – 6 |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.**(–∞, ∞) | | **B.**(6, ∞) | | **C.**[6, ∞) | | **D.**(–∞, 6) ∪ (6, ∞) | |  |  |  |  |  |  |  |  |  |
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| 17.   Fifteen coins consisting of nickels, dimes, and quarters were collected from a newspaper vending machine. The total value of the coins is $1.95, and there are 4 more dimes than quarters. Find the number of each type of coin. | | | | | | | | | |
| |  | | --- | | **A.**3 nickels; 8 dimes; 4 quarters | | **B.**2 nickels; 9 dimes; 5 quarters | | **C.**5 nickels; 7 dimes; 3 quarters | | **D.**7 nickels; 6 dimes; 2 quarters | | | | | | | | | | |

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| 18.   If ƒ(*x*) = 4*x*2 + 8*x* – 9, find and simplify ƒ(2 + *x*). |
| |  | | --- | | **A.**4*x*2 + 24*x* + 23 | | **B.**4*x*2 + 2*x* + 23 | | **C.**4*x*2 + 8*x* –11 | | **D.**23 + *x* | |

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| 19.   Which of the following is a linear function? |
| |  | | --- | | **A.**ƒ(*x*) = 2 + *x* + *x*2 | | **B.**ƒ(*x*) = 2 – 7*x* | | **C.**https://my.pennfoster.com/exams/images/350402RR_Q8_fx-2-x-7.png | | **D.**ƒ(*x*) = √ 2 + 7*x* | |
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| 20.   Solve the system using the Gauss-Jordan method. –4*x* + 2*y* = –6 *x* + 3*y* = 5 |  |  |  |  |  |  |  |  |  |
| |  | | --- | | **A.**(–2, 9) | | **B.**(2, 1) | | **C.**(4, 5) | | **D.**(–4, 5) | |  |  |  |  |  |  |  |  |  |