1. Determine which of the following points lies on the graph of the equation:



|  |  |  |
| --- | --- | --- |
|  |  | (0,7) |
|  |  | (0,6) |
|  |  | (0,5) |
|  |  | (6,5) |
|  |  | (1,5) |

**5 points**

QUESTION 2

1. Complete the table.  Use the resulting solution points to sketch the graph of the equation.



|  |  |  |
| --- | --- | --- |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_2_a.jpg |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_2_b.jpg |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_2_c.jpg |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_2_d.jpg |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_2_e.jpg |

**5 points**

QUESTION 3

1. Graphically estimate the x- and y- intercepts of the graph:

y = x3 - 9x



|  |  |  |
| --- | --- | --- |
|  |  | x-intercept: (±3,0),(0,0)y-intercept: (0,0) |
|  |  | x-intercept: (3,0),(0,0)y-intercept: (0,0) |
|  |  | x-intercept: (-3,0),(0,0)y-intercept: (0,0) |
|  |  | x-intercept: (0,±3),(0,0)y-intercept: (0,0) |
|  |  | x-intercept (0,3),(0,0)y-intercept (0,0) |

**5 points**

QUESTION 4

1. Find the x- and y-intercepts of the graph of the equation

y=49-7x

|  |  |  |
| --- | --- | --- |
|  |  | x-intercept: (7,0)y-intercept: (0,-7) |
|  |  | x-intercept: (49,0)y-intercept: (0,7) |
|  |  | x-intercept: (-7,0)y-intercept: (0,-49) |
|  |  | x-intercept: (49,0)y-intercept: (0,49) |
|  |  | x-intercept: (7,0)y-intercept: (0,49) |

**5 points**

QUESTION 5

1. Determine whether the value of x=7 is a solution of the equation:



|  |  |  |
| --- | --- | --- |
|  |  | no |
|  |  | yes |

**5 points**

QUESTION 6

1. Solve the equation 8-5x=6

|  |  |  |
| --- | --- | --- |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_6_a.jpg |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_6_b.jpg |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_6_c.jpg |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_6_d.jpg |
|  |  | https://content.grantham.edu/at/MA105/exams/w2_6_e.jpg |

**5 points**

QUESTION 7

1. Solve the equation and check your solution.

-2-4x=30

|  |  |  |
| --- | --- | --- |
|  |  | 9 |
|  |  | -11 |
|  |  | -8 |
|  |  | 7 |
|  |  | -10 |

**5 points**

QUESTION 8

1. Solve the equation and check your solution.

5y + 1 = 6y - 5 + 8y

|  |  |  |
| --- | --- | --- |
|  |  | 2/3 |
|  |  | 3/2 |
|  |  | 6/5 |
|  |  | 5/6 |
|  |  | -2/3 |

**5 points**

QUESTION 9

1. Solve the equation and check your solution.

67x - 24 = 3x + 8(8x-3)

|  |  |  |
| --- | --- | --- |
|  |  | 3 |
|  |  | 67 |
|  |  | -3 |
|  |  | -67 |
|  |  | All real numbers |

**5 points**

QUESTION 10

1. Solve the equation and check your solution.



|  |  |  |
| --- | --- | --- |
|  |  | 10 |
|  |  | 6 |
|  |  | 7 |
|  |  | 9 |
|  |  | 8 |

**5 points**

QUESTION 11

1. Solve the equation and check your solution.  (If not possible, explain why.)



|  |  |  |
| --- | --- | --- |
|  |  | 2 |
|  |  | 5 |
|  |  | 6 |
|  |  | 4 |
|  |  | 10 |

**5 points**

QUESTION 12

1. Solve the equation and check your solution.  (If not possible, explain why)



|  |  |  |
| --- | --- | --- |
|  |  | -18 |
|  |  | 7 |
|  |  | 11 |
|  |  | No solution.  The variable is divided out. |
|  |  | 20 |

**5 points**

QUESTION 13

1. Write the quadratic equation in general form.

4x2 = 8 - 9x

|  |  |  |
| --- | --- | --- |
|  |  | 4x2 + 9x + 8 = 0 |
|  |  | 4x2 + 9x = -8 |
|  |  | 4x2 - 9x - 8 = 0 |
|  |  | -4x2 + 9x - 8 = 0 |
|  |  | 4x2 + 9x - 8 = 0 |

**5 points**

QUESTION 14

1. Solve the quadratic equation by factoring.

x2 - 6x + 5 = 0

|  |  |  |
| --- | --- | --- |
|  |  | -1, 5 |
|  |  | -1,-5 |
|  |  | 1,-5 |
|  |  | 1,5 |
|  |  | 6,5 |

**5 points**

QUESTION 15

1. Solve the quadratic equation by factoring.

x2 + 8x + 16 = 0

|  |  |  |
| --- | --- | --- |
|  |  | 4 |
|  |  | -1/4 |
|  |  | -4 |
|  |  | ±4 |
|  |  | 1/4 |

**5 points**

QUESTION 16

1. Solve the equation by extracting square roots.

(x+6)2 = 5

|  |  |  |
| --- | --- | --- |
|  |  | 6 + √5 |
|  |  | -6 ± √5 |
|  |  | -6 -√5 |
|  |  | 6 ± √5 |
|  |  | -6 + √5 |

**5 points**

QUESTION 17

1. Use the Quadratic Formula to solve

x2 + 20x + 98 = 0

|  |  |  |
| --- | --- | --- |
|  |  | x = -8, x = -12 |
|  |  | x = -√2 - 10, x = √2 - 10 |
|  |  | x = -√3 - 10, x = √3 - 10 |
|  |  | x = 10, x = -10 |
|  |  | x = -√2 - 9, x = √2 - 9 |

**5 points**

QUESTION 18

1. Write the complex number in standard form.

√ -9

|  |  |  |
| --- | --- | --- |
|  |  | 3i |
|  |  | -3i |
|  |  | 9i |
|  |  | 4i |
|  |  | -9i |

**5 points**

QUESTION 19

1. Find real numbers a and b such that the equation is true.

a + bi = 14 + 2i

|  |  |  |
| --- | --- | --- |
|  |  | a=16, b=4 |
|  |  | a=18, b=6 |
|  |  | a=14, b=2 |
|  |  | a=15, b=14 |
|  |  | a=17, b=5 |

**5 points**

QUESTION 20

1. Find all solutions to the following equation.



|  |  |  |
| --- | --- | --- |
|  |  | x = -17/4 |
|  |  | x=9 |
|  |  | no solution |
|  |  | x=-17 |
|  |  | x=-8 |