MTH111 College Algebra Unit 1 Assessment Test Bank

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | Could easily be turned into an online yes/no problem | 2 | Would need to see the students work | 3 | Could be turned into an online short answer problem |
| 4 | Could be turned into an online short answer problem | 5 | Could be turned into an online essay problem | 6 | Could probably be turned into an online short answer problem... |
| 7 | Would need to see the students work | 8 | Would need to see the students work | 9 | Could be turned into an online short answer problem |
| 10 | Would need to see the students work | 11 | Could be turned into an online short answer problem | 12 | Would need to see the students work |
| 13 | Could be turned into an online short answer problem | 14 | Could be turned into an online short answer problem | 15 | Would need to see the students work |

**1.1 Identify whether the following are functions, and if so, whether they are one to one functions ( 8 pts)**

a)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 2 | 4 | 6 | 8 | 10 |
| v | -1 | -2 | -3 | -4 | -5 |

Yes Yes

1. Function? Yes No 2.One to one function? Yes No

b)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 2 | 4 | 6 | 4 | 2 |
| v | -1 | -2 | -3 | -4 | -5 |

No No

3.Function? Yes No 4.One to one function? Yes No

c)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 2 | 4 | 6 | 8 | 10 |
| v | -1 | -2 | -3 | -2 | -1 |

Yes No

5.Function? Yes No 6.One to one function? Yes No

|  |  |  |  |
| --- | --- | --- | --- |
| d) |  | e) |  |
|  | 7.Function? Yes No Yes  8.One to one function? Yes No No |  | 9.Function? Yes No Yes    10.One to one function? Yes No Yes |
|  |  |  |  |

**1.2 Identify whether the following are functions, and if so, whether they are one to one functions (8pts)**

a)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 1 | 2 | 3 | 4 | 5 |
| v | -1 | -2 | -3 | -4 | -5 |

Yes Yes

1. Function? Yes No 2.One to one function? Yes No

b)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 6 | 8 | 6 | 8 | 6 |
| v | -1 | -2 | -3 | -2 | -1 |

No No

3.Function? Yes No 4.One to one function? Yes No

|  |  |  |  |
| --- | --- | --- | --- |
| c) |  | d) |  |
|  | 5.Function? Yes No Yes  6.One to one function? Yes No No |  | 7.Function? Yes No Yes    8.One to one function? Yes No Yes |

**1. 3 Identify whether the following are functions, and if so, whether they are one to one functions (8 pts)**

a)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 1 | 2 | 3 | 4 | 5 |
| v | -1 | -2 | -3 | -4 | -5 |

Yes Yes

1.Function? Yes No 2.One to one function? Yes No

b)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 2 | 4 | 6 | 8 | 10 |
| v | -1 | -2 | -3 | -2 | -1 |

Yes No

3.Function? Yes No 4.One to one function? Yes No

|  |  |  |  |
| --- | --- | --- | --- |
| c) |  | d) |  |
|  | 5.Function? Yes No No  6.One to one function? Yes No No |  | 7.Function? Yes No Yes    8.One to one function? Yes No No |

**1.4 Identify whether the following are functions, and if so, whether they are one to one functions (8 pts)**

|  |  |  |  |
| --- | --- | --- | --- |
| a) |  | b) |  |
|  | 1.Function? Yes No Yes  2.One to one function? Yes No No |  | 3.Function? Yes No Yes    4.One to one function? Yes No Yes |

c)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 1 | 2 | 3 | 4 | 5 |
| v | -1 | -2 | -3 | -2 | -3 |

Yes No

5.Function? Yes No 6.One to one function? Yes No

d)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| t | 6 | 8 | 6 | 8 | 6 |
| v | -1 | -2 | -3 | -2 | -1 |

No No

7.Function? Yes No 8.One to one function? Yes No

Would need to see the students work

**For this question you will be required to upload either a document, picture or screen shot showing your work.**

**2.1 Given the function , evaluate and simplify (4 pts) Show your work.**

a) b)

**2.2 Given the function , evaluate and simplify (4 pts) Show your work.**

a) b)

**2.3 Given the function , evaluate and simplify (4 pts) Show your work.**

a) b)

**2.4 Given the function , evaluate and simplify (4 pts) Show your work.**

a) b)

**3.1 The function is represented by the table below**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | -2 | -1 | 0 | 1 | 2 | 3 |
|  | 5 | 3 | 1 | -2 | -5 | 0 |

1) Evaluate 2) Solve

1) -5 2) x=-1

**3.2 The function is represented by the table below**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | -2 | -1 | 0 | 1 | 2 | 3 |
|  | 7 | 5 | 3 | 1 | 2 | 3 |

1) Evaluate 2) Solve

1) 5 2) 0, 3

|  |  |
| --- | --- |
| **3.3 The function is represented by the graph:**  1) Evaluate  2) Solve  1) Evaluate 3  2) Solve x=2 |  |
| **3.4 The function is represented by the graph:**  1) Evaluate  2) Solve  1) Evaluate 1  2) Solve x=-1 |  |

**4.1 Use the given piecewise function to evaluate the following**

1) 2) 3)

1) 4 2) 9 3) 0

**4.2 Use the given piecewise function to evaluate the following**

1) 2) 3) =

1) 3 2) 0 3) = 10

**4.3 Use the given piecewise function to evaluate the following**

1) 2) 3) =

1) -1 2) 4 3) = 9

**5.1** On a hot summer day Owen decides to fill up a kiddie pool with water for his dog to play in. Let be the volume of a swimming pool in gallons t minutes after Owen turns on the faucet to start filling the pool.

a) Explain the meaning of, be sure to include units in your answer.

b) If you were to solve the equation , what would your solution represent?

**52.** Brad is getting ready for the football season and running laps at the track every morning. Let be the number of laps he runs after days of training

a) Explain the meaning of, be sure to include units in your answer.

b) If you were to solve the equation , what would your solution represent?

**5.3** Alicia is excited to be leaving for her vacation and is heading for the airport this morning. Let be the distance (in miles) driven minutes after starting her trip.

a) Explain the meaning of be sure to include units in your answer.

b) If you were to solve the equation, what would your solution represent?

**6.1 State the domain of the following functions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1)** |  | **2)** |  | **3)** |  |

**6. 2 State the domain of the following functions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1)** |  | **2)** |  | **3)** |  |
|  | Domain: |  | Domain: |  | Domain: |
|  |  |  |  |  |  |

**6.3 State the domain of the following functions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1)** |  | **2)** |  | **3)** |  |
|  | Domain: |  | Domain: |  | Domain: |

Would need to see the students work

**For this question you will be required to upload either a document, picture or screen shot showing your work.**

**7.1** Find the average rate of change for the function on the interval .

**7.2** Find the average rate of change for the function on the interval .

**7.3** Find the average rate of change for the function on the interval.

Would need to see the students work

**For this question you will be required to upload either a document, picture or screen shot showing your work.**

|  |  |
| --- | --- |
| **8. 1** Based on the graph shown, estimate the average rate of change from to .  1 |  |
| **8.2** Based on the graph shown, estimate the average rate of change from to .  2 |  |
| **8. 3** Based on the graph shown, estimate the average rate of change from to .  -2 |  |

|  |  |
| --- | --- |
| **9.1** Based on the graph shown, estimate the interval(s) where the graph is  1) increasing  2) concave down |  |

|  |  |
| --- | --- |
| **9.2** Based on the graph shown, estimate the interval(s) where the graph is  1) increasing  2) concave up |  |

|  |  |
| --- | --- |
| **9.3** Based on the graph shown, estimate the interval(s) where the graph is  1) decreasing  2) concave down |  |

Would need to see the students work

**For this question you will be required to upload either a document, picture or screen shot showing your work.  (4 pts)**

10.1 Use the functions and to find both and

10. 2 Use the functions and to find both and

10.3 Use the functions and to find both and

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **11.1** Use the table of values to evaluate each expression  1) -1  2) 2  3) -1 | |  |  |  | | --- | --- | --- | |  |  |  | | -2 | 3 | 7 | | -1 | 4 | 6 | | 0 | 5 | 5 | | 1 | 3 | 4 | | 2 | 1 | 3 | | 3 | -1 | 2 | |
| **11.2** Use the table of values to evaluate each expression  1) 2  2) 1  3) -1 | |  |  |  | | --- | --- | --- | |  |  |  | | -2 | 3 | 7 | | -1 | 4 | 6 | | 0 | 5 | 5 | | 1 | 3 | 4 | | 2 | 1 | 3 | | 3 | -1 | 2 | |

**11.3** Use the given graphs to evaluate each expression

a) -1 b) 1 c) 2

|  |  |  |
| --- | --- | --- |
|  |  |  |

Would need to see the students work

**For this question you will be required to upload either a document, picture or screen shot showing your work.**

12.1 For , find

12.2 For , find

12.3 For , find

|  |  |  |  |
| --- | --- | --- | --- |
| **13.1 Using the graph shown, find**  a) 7  b) Solve 1.5  c) Find 3  d) Solve 1 | | |  |
| **13.2 Using the graph of shown, find**  a) = 2  b) Solve 2  c) Find -2  d) Solve 4 | |  | |
| **13.3 Using the table of shown, find**  a) = 4  b) Solve 0  c) Find 2  d) Solve -1 | |  |  | | --- | --- | |  |  | | -2 | 5 | | -1 | 4 | | 0 | 3 | | 1 | 1 | | 2 | 0 | | 3 | -1 | | | |

**14.1** For the function determine a domain where it will have an inverse. There is more than one correct answer.

**14.2** For the function determine a domain where it will have an inverse. There is more than one correct answer.

|  |  |
| --- | --- |
| 14.3 For the function , determine a domain where it will have an inverse. There is more than one correct answer. |  |
|  |  |

|  |  |
| --- | --- |
| **14.4** For the function , determine a domain where it will have an inverse. There is more than one correct answer. |  |

Would need to see the students work

**For this question you will be required to upload either a document, picture or screen shot showing your work.**

**15.**1 Use the given graph of to sketch the transformations.

|  |  |
| --- | --- |
|  | This is  You may find it helpful to first describe each transformation in words before sketching the transformation.  a) Sketch  b) Sketch +1  c) Sketch  d) Sketch |
| a) Sketch | b) Sketch +1 |
| c) Sketch | d) Sketch |

15.2 Use the given graph of to sketch the transformations.

|  |  |
| --- | --- |
|  | This is  You may find it helpful to first describe each transformation in words before sketching the transformation.  a) Sketch  b) Sketch  c) Sketch  d) Sketch |
| a) Sketch | b) Sketch |
| c) Sketch | d) Sketch |

|  |  |
| --- | --- |
| 15.3  a)  The graph of is given. Sketch |  |
| b)  In words, describe the transformations (in order) that were done to the graph of to produce the graph of . |  |
| c) The graph of and a transformation of are given. Determine the values of , and for the transformed function. |  |
| 15.4  a) The graph of is given. Sketch |  |
| b) In words, describe the transformations (in order) that were done to the graph of to produce the graph of . |  |
| c) The graph of and a transformation of are given. Determine the values of , and for the transformed function. |  |