MTH111 College Algebra Unit 4 Assessment Test Bank

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | Could be turned into an online matching problem | 2 | Would need to see the students work | 3 | Would need to see the students work |
| 4 | Could be turned into an online matching problem | 5 | Would need to see the students work | 6 | Short answer & True/False |
| 7 | Multiple Choice | 8 | Would need to see the students work | 9 | Would need to see the students work |
| 10 | Would need to see the students work | 11 | Would need to see the students work |  |  |

|  |  |
| --- | --- |
| 1. Match each exponential function with one of the graphs.  a) E  b) D  c) C  d) A  e) B |  |

|  |  |
| --- | --- |
| 1. Match each exponential function with one of the graphs.  a) D  b) C  c) E  d) A  e) B |  |

|  |  |
| --- | --- |
|  | 1. Use the graphs of to answer the following questions.  a) Which graph has the largest value of b? D  b) Which graph has the smallest value of b? B  c) Which graph has the largest value of a? C  d) Which graph has the smallest value of a? A |

|  |  |
| --- | --- |
|  | 1. Use the graphs of to answer the following questions.  a) Which graph has the largest value of b? A  b) Which graph has the smallest value of b? C  c) Which graph has the largest value of a? B  d) Which graph has the smallest value of a? D |

|  |  |
| --- | --- |
| 2. Make a careful (accurate) graph of .  Label the axes.  (You may find it helpful to describe the transformations in words.) |  |

|  |  |
| --- | --- |
| 2. Make a careful (accurate) graph of .  Label the axes.  (You may find it helpful to describe the transformations in words.) |  |

|  |  |
| --- | --- |
| 2. Find an equation for the transformed **exponential** graph. |  |

|  |  |
| --- | --- |
| 2. Find an equation for the transformed **exponential** graph. |  |

3. A house was purchased for $145,000. Ten years later, the value had grown to $215,000.

a) Assuming **exponential** growth, find a model for the value of the house.

b) Assuming that the house continues to grow by the same percentage, what will be the value of the house 20 years after its purchase?

c) When will the house be worth $300,000?

3. A house was purchased for $125,000. Ten years later, the value had grown to $180,000.

a) Assuming **exponential** growth, find a model for the value of the house.

b) Assuming that the house continues to grow by the same percentage, what will be the value of the house 20 years after its purchase?

c) When will the house be worth $300,000?

3. A house was purchased for $130,000. By ten years later, the value had grown to $190,000.

a) Assuming **exponential** growth, find a model for the value of the house.

b) Assuming that the house continues to grow by the same percentage, what will be the value of the house 20 years after its purchase?

c) When will the house be worth $300,000?

|  |  |
| --- | --- |
| 4a  written in logarithmic form would be:  A.  B.  C.  A | 4b  written in exponential form would be:  A.  B.  C. C |

|  |  |
| --- | --- |
| 4a  written in logarithmic form would be:  A.  B.  C.  B | 4b  written in exponential form would be:  A.  B.  C.  C |

|  |  |
| --- | --- |
| 4a  written in logarithmic form would be:  A.  B.  C.  C | 4b  written in exponential form would be:  A.  B.  C.  A |

5. Solve the following equations algebraically, show your work.

a) b)

5. Solve the following equations algebraically, show your work.

a) b)

5. Solve the following equations algebraically, show your work.

a) b)

6.

a) Use your calculator to estimate (accurate to 4 decimal places):. 1.7227

b) True or False? F

c) True or False? T

d) True or False? F

6.

a) Use your calculator to estimate (accurate to 4 decimal places):. 1.9534

b) True or False? F

c) True or False? T

d) True or False? F

6.

a) Use your calculator to estimate (accurate to 4 decimal places):. 2.5237

b) True or False? T

c) True or False? F

d) True or False? T

|  |  |  |  |
| --- | --- | --- | --- |
| 7. a. The expanded form of would be: A | | | |
| A.. | B. | C. | D. |
| 7. b. The condensed form of would be: C | | | |
| A. | B. | C. | D. |

|  |  |  |  |
| --- | --- | --- | --- |
| 7. a. The expanded form of would be: B | | | |
| A. | B. | C. | D. |
| 7. b. The condensed form of would be: A | | | |
| A. | B. | C. | D. |

|  |  |  |  |
| --- | --- | --- | --- |
| 7. a. The expanded form of would be: B | | | |
| A. | B. | C. | D. |
| 7. b. The condensed form of would be: C | | | |
| A. | B. | C. | D. |

8. Solve each equation, show your work.

a) b)

8. Solve each equation algebraically, show your work.

a) b)

8. Solve each equation algebraically, show your work.

a) b)

9. With my rather casual housekeeping methods, it is not unusual to find an unidentifiable mass in the back of my refrigerator. Let’s suppose it was once a large, plump Brandywine tomato weighing 7.8 ounces. Now, after 16 days in the refrigerator, it is an oozing red blob weighing 3.2 ounces. Find the half-life of this tomato.

9. Inspectors for the USDA have determined that a sample of ground beef has an e-coli bacteria count of 100 CFU/ml. The meat sample is tested 2 hours later and found to have 13,300 CFU/ml. Find the doubling of the bacteria.

9. We initially have 50g of a radioactive isotope. After 31 days we have 37g of the isotope remaining. Find the half-life of the isotope.

10. For the function find the domain, the horizontal intercept, the vertical intercept and the vertical asymptote. Use that information to sketch the graph of the function.

Domain\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Horiz. intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vert. intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. For the function find the domain, the horizontal intercept, the vertical intercept and the vertical asymptote. Use that information to sketch the graph of the function.

Domain\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Horiz. intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vert. intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. For the function find the domain, the horizontal intercept, the vertical intercept and the vertical asymptote. Use that information to sketch the graph of the function.

Domain\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Horiz. intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vert. intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. Find a formula for the transformed logarithm graph.

11. Find an equation for the transformed **logarithm** graph.

11. Find an equation for the transformed **logarithm** graph.