**Show All Work!** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Remember Units!**

# Math 9 - Unit 3 Practice Test

**/48**

1. Write as a power and then evaluate. (2 marks each)

a) (4)(4)(4)

b) – 6x6x6 =

1. Write as a repeated multiplication and then evaluate (2 marks each)

a) =

b) =

1. Explain how  is different from . (1 mark)
2. Evaluate. (1 mark each)

a)  b) 

c)  d) 

1. Write as a power of ten. (1 mark each)

a) 1 b) 100 000

 

1. Evaluate. (2 marks each)

a)  b) 

1. Write each expression as a **power**. (1 mark each)

a)  b) 

c)  d) 

1. Simplify, then evaluate.  (2 marks)
2. Write each expression as a product of powers. (1 mark each)

a)  b) 

1. Write each expression as a quotient of powers. (1 mark each)

a)  b) 

1. Write as a single power. (1 mark each)

a)  b) 

14. Simplify, then evaluate. (3 marks) 23 – [(-2)4(-2)3 ÷ (-2)5]7 ÷ [(-2)4]3

15. The two bacteria that a microbiologist is studying reproduce at different exponential rates as long as conditions are appropriate. Sample A starts with just 50 bacteria. The population triples every hour. Sample B starts with 600 bacteria and doubles every hour.

1. Create a chart to show the numbers of bacteria in each sample after 0 to 8 hours.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Sample A |  |  |  |  |  |  |  |  |  |
| Sample B |  |  |  |  |  |  |  |  |  |

b) Write an expression to model the number of bacteria after a number of hours, *n*

 for sample A

 for sample B

c) How many bacteria will be present in sample A and sample B after 10 hours?